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Original Articles

A NEW AND MORE RATIONAL METHOD OF TREATMENT OF LEUKEMIA BY THE *X*-RAY.

PRELIMINARY REPORT.*

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PART I.

Before reporting the technical aspects of the method of treatment which we have recently practiced it may be well to consider very briefly those aspects of the pathology of leukemia which bear on the matter of the topical treatment with agents such as the *x*-rays and also to review the facts that have become known regarding the probable effects of the *x*-rays on the tissues in this disease.

PATHOLOGY OF LEUKEMIA.

The gross lesions observed in leukemia, whether of the lymphatic or lienomedullary form, are much the same. There is found an infiltration of a grayish white character in the spleen, bone marrow or lymph nodes, or in all of these structures, and not infrequently a similar change in the liver, kidneys and other glandular organs. In the so-called lymphatic form, these changes are especially pronounced in the lymphatic nodes, and macroscopically may be confined to these structures. In the lienomedullary form the changes are more evident in the spleen and bone marrow.

Discussions regarding the essential pathology of leukemia have grouped themselves about several main propositions: (a) The organ or structure first involved; (b) the nature of the process; (c) the question whether the secondary infiltrations in other organs represent simple infiltration processes or active proliferative growth from deposited cells derived from the original foci.

(a) The first of these questions has finally been settled, in the opinion of the great majority of pathologists, in favor of the bone marrow. Until late years cases of lymphatic leukemia were supposed to have no relation to disease of this structure, but numerous recent studies have proved that even in lymphatic leukemia, whether of the acute or chronic variety, definite changes are found in the bone marrow, and in some of these cases the medullary changes have been present when no alteration was yet discoverable in the lymph nodes, either macroscopically or microscopically. So far as lienomedullary or mixed forms of leukemia are concerned, pathologists have, for a long time, more unanimously regarded the bone marrow as the primary seat of disease.

(b) Regarding the nature of the process it is impossible to dogmatize. Our own opinion, expressed in other places, has, for a long time, inclined us to believe that the disease is closely related to neoplastic processes. There is an undoubted close connection between certain sarcomata and leukemia. The histologic features, the progress of the disease, the metastases, and the clinical analogies suggested by cases of undoubted sarcoma tend to confirm this opinion.

(c) So far as the secondary changes in the spleen, liver and other organs are concerned, opinions have differed widely. Virchow, in his early descriptions, indicated the resemblance of these lesions to metastases of tumors, but subsequently a different interpretation gained ground, attributing the secondary lesions to a metaplasia of the normal tissues of the organs involved, to proliferation of "rests" of myeloid elements or to hyperplasia of the ordinary structural components of the organs involved. It is important to recognize that the histologic study of the secondary lesions in mixed leukemia shows a large proportion of myeloid elements (myelocytes, eosinophile myelocytes, erythroblasts). The picture is that of a myeloid transformation of the normal structure.

Three interpretations of this are possible: (1) That there has been a direct myeloid metaplasia; (2) that there has been a rapid proliferation of myeloid "rests," and (3) that there has been metastatic deposit of myeloid elements, with subsequent proliferation *in loco*. We can not enter into a complete discussion of this matter here, but may state that practically all recent writers incline to the belief that the third of these possibilities is the most probable. In the case of lymphatic leukemia, the evidence is somewhat less satisfactory, though in this case, also, the trend of recent opinion is in the direction of proliferation of metastatic cells in the organs in which they have been deposited.

To a certain extent the cellular elements of the lesions in the liver, spleen, lymph nodes, etc., are purely filtration deposits which have resulted from the excessive number of leucocytes in the circulating blood. The rapid fluctuation in the size of the spleen and lymph nodes observed in some cases is evidence in favor of the presence of new deposits of cells that have no fixed relation to the structure of the organs involved.

TREATMENT.

It is unnecessary to enter on a discussion of the medical treatment of this disease. So far as drugs are concerned, it has been clearly shown that, with the exception of arsenic, which occasionally exercises an inhibitive or even temporarily curative effect, medicaments are practically valueless.

The fact that certain cases of leukemia have undergone spontaneous cure as a result of intercurrent infections, or more often have been profoundly altered in their course by such an event, has led to the use of vac-

* Read before the American Roentgen Ray Society, Cincinnati, Oct. 3, 1907.

cination (vaccinia) and more recently to injections of various sera in the hope that a similar effect might be produced. These experiments have thus far proved ineffectual.

The most striking results from treatment have been those obtained from exposure of the patient to the *x*-rays. Experiments have heretofore directed the rays to the organs obviously enlarged, such as the spleen and lymph nodes. A consideration of the pathology of the disease and of the known facts regarding the effects of *x*-rays has, however, convinced us that this method of application can accomplish a desired result only in a round-about fashion.

The experiments of Heineke, Linser and Helber, and Capps and Smith have shown that the *x*-rays have a decidedly destructive effect on leucocytes, especially the mononuclear cells and myelocytes, and Capps and Smith particularly found that there are thus produced leucolytic substances which have the power of destroying other leucocytes, either in the exposed individual or in others into whose circulation the serum from the exposed case has been injected.

The effect, then, of treating with *x*-rays the spleen or lymph nodes of leukemic patients may be stated as follows: First, there is destruction of certain cells (mainly mononuclear leucocytes and myelocytes) in the parts treated; second, as a result of such destruction, leucolytic substances are produced and liberated; third, these substances, reaching the bone marrow and other affected parts, destroy a certain number of cells in these situations. It is apparent, then, if the asserted facts are true, that the source and origin of the disease (the bone marrow) is reached in a round-about way. If this could be treated more directly, the effect on the whole course of the disease might be controlled more readily. Moreover, it might be expected that the violent reactions (fever, collapse, etc.) sometimes caused by exposure of large deposits of vulnerable cells (as in the spleen and lymph nodes) could thus be avoided, while a much more direct and beneficial influence on the continued existence and spread of the disease would be exercised. Our experiences seem to justify the probable truth of these assumptions. In the cases in which we have substituted treatment of the bone marrow for that of the spleen, we have found a decided diminution in the reactions that have been so commonly observed when the older method of treatment was employed, and at the same time the effect on the number of leucocytes in the circulating blood and on the size of the spleen has been altogether more continuous and progressive.

PART II.

From the standpoint of *x*-ray therapeutics, the unsatisfactory ultimate results which have been uniformly obtained up to the present time, and the lack of conformity of these results, as a whole, with the comparatively large percentage of primary symptomatic cures or initial improvements which have been reported, certainly justify a fair trial of any radical departure from the technic hitherto employed, provided such a change is rational and is based on sound scientific principles.

In a paper read before the American Roentgen-Ray Society in September, 1907, one of us presented a statistical report of the results, as a whole, which had been obtained up to that time. The data were derived from a review of the literature on the subject, and from replies to personal letters requesting the final outcome in a number of cases, the reports of which were incomplete in one way or another.

The results of this investigation were discouraging, so far as they concerned the ultimate success of the treatment, but were not surprising. From the two sources mentioned, reports of 123 cases of leukemia treated by the *x*-rays were collected. Of this number, 83, or about 67.5 per cent., were of the splenomyelogenous variety; 30, or about 24.5 per cent., were lymphatic cases, and 10, or about 8 per cent., were unclassified. Complete and final reports were obtainable in 69 of these cases, or about 56 per cent., and the ultimate results of the treatment of this number, corrections being made for data received later, are represented in Table I:

TABLE I.

	Splenomedullary.	Lymphatic.	Unclassified.	Totals.	Approximate Per cent.
Permanent cures	3	3	0	6	8.7
Died, or in critical condition at last report	35	20	4	59	85.5
Still under treatment for relapses following symptomatic cures	4	0	0	4	5.8
Totals	42	23	4	69	100.0

It is plainly to be seen, therefore, that the *x*-ray as a therapeutic agent does not offer much hope of *ultimate* success as hitherto employed in the treatment of leukemia. On the other hand, the results indicated by Table II show that it has a very decided and powerful therapeutic action when applied to leukemic patients:

TABLE II.

	Splenomedullary.	Lymphatic.	Unclassified.	Totals.	Approximate Per cent.
Primary symptomatic cures, not permanent	20	5	0	25	36.23
Initial improvement noted, not permanent	14	6	1	21	30.43
Total cases in which more or less benefit was noted, primarily	34	11	1	46	66.66
Cases in which there was little or no favorable reaction	5	9	3	17	24.64
Permanent cures	3	3	0	6	8.70
Totals	42	23	4	69	100.00

The fact that a therapeutic agent is capable of so profound an influence on a disease as to produce such primary results as are indicated by these figures is sufficient reason for us to make every effort to satisfactorily explain our inability, when employing it in the treatment of the disease, to effect permanent cures in more than 8.7 per cent. of the cases treated.

This lack of conformity of ultimate results with favorable primary effects means one of two things: (1) Either *x*-ray treatment is not capable of accomplishing any better results than those so far obtained, or (2), taking for granted that it is capable of curing the disease by a removal of the cause, directly or indirectly, if properly employed, then there must be something radically wrong with our present method of administering the treatment. The latter hypothesis gives a more promising outlook for the patient and at the same time is rational and conservative. It is our purpose to suggest a form of *x*-ray treatment for leukemia which not only seems more appropriate and more scientific theoretically, than the method hitherto employed, but its merits have been demonstrated practically by superior clinical results.

Personal experience and the information derived from discussions and an incomplete perusal of recorded re-

ports had almost led to the expectation that a review of the literature would reveal the fact that not a single case of leukemia had ever been permanently cured directly and solely by *x*-ray treatment. Therefore, even the small percentage of cures found on record was somewhat surprising. Small though this figure is, however, no other form of treatment can accomplish more nor perhaps as much, and it is sufficient to have made the employment of the *x*-ray worth while. But the large percentage of ultimate failures following, with comparative frequency, the most promising primary results, has been discouraging to most radiographers, and in some instances almost brought the treatment into disrepute. An important fact is revealed by a careful study of the records. Undoubtedly the *x*-ray has been used carelessly and injudiciously in many instances, although such a charge could be definitely proved in connection with but few of them.

The discouragement shared with others who have had experience with this treatment has been an incentive to investigate the cause of our failures rather than to give up hope of better success. Numerous modifications in minor details of the technic were tried experimentally, but failed to yield any better results.

Certain facts which have been satisfactorily proved, experimentally and clinically, may be mentioned as additional evidence in support of the modification of the treatment herein suggested:

1. Heineke and Warthin have proved conclusively that the effect on the bone marrow of animals subjected to prolonged *x*-ray exposure is essentially the same as that on the lymphoid tissue.

2. If we assume that the bone marrow is most likely the actual seat of the disease, and that the enlarged spleen is but a secondary manifestation, then the treatment by applications of the *x*-ray to the latter is directed against a result, and not the cause or seat of the disease. The comparative ease with which this large mass of lymphoid tissue is destroyed, when exposed directly, has been explained in the results of the experiments of Heineke and Warthin on animals and the metabolism investigations of Edsall and others in connection with leukemic patients. In animals the rapid destruction of the lymphatic tissues and bone marrow is ascribed to an autolytic process, instituted or stimulated by the prolonged direct *x*-ray exposures. It can not be proved that the same phenomena take place in man, because we can not subject our patients relatively as long. Moreover, we are not justified in drawing definite conclusions nor in making comparisons from the results of *x*-ray exposures on healthy animals, on the one hand, and leukemic patients, on the other. But, at any rate, there is some similarity in the results in the two instances.

Our clinical observations have shown that a single application directly over the enlarged spleen of a leukemic patient is usually followed, in a few hours, by a very decided drop in the leucocyte count, and if the exposure has been long enough, by evidences of a toxemia. As a single exposure does not perceptibly reduce the size of the spleen, we must assume, from our present knowledge, that this rapid destruction of leucocytes in the blood is also due to an autolytic process. The fact that the count will invariably rise soon afterward to a point as high as or even higher than those before shows that the spleen is still active.

There is also reasonable ground for the belief that the products of disintegration of the leucocytes become active factors in the destructive process and may, perhaps, exert some inhibitory influence on the activity of the pathologic parent cells. The destructive action of some of these products on renal cells has been demonstrated postmortem in a few cases in which death has resulted directly or indirectly from a toxemia during *x*-ray treatment.

During the earlier exposures it is the cells circulating in the blood which are actually destroyed. Whether or not the destructive agents are active in the blood or in the lymph structures, especially the spleen, or in both, it is almost certain that they are present in the blood. Repeated experiments by Smith and Capps have shown that the serum of leukemic patients under *x*-ray treatment, when injected into other leukemic patients, caused a rapid and decided drop in the leucocyte count of the latter, followed soon afterward by a rapid rise, to a point as high as or higher than before. When such serum was injected into healthy animals, the effect was similar, and the more favorably the patient had responded to the treatment the more marked was the reaction. On the other hand, injections of normal serum or that taken from leukemic patients before *x*-ray exposures were begun were followed by a leucocytosis. These same observers have noted that the sera of lymphatic and splenomedullary cases under treatment seemed to have a selective action on the lymphocytes and myelocytes, respectively, in the blood of patients who had not been treated.

After several applications have been made directly to the spleen, a gradual and progressive reduction in size usually follows. This may be due to the destructive effect of the cumulative action of the rays, such as has been observed in animals, but such an explanation is not altogether satisfactory, in view of certain observations that have been made in connection with the treatment of some of our cases. These points will be discussed later in the conclusions drawn from our study of clinical results.

3. A rapid destruction of lymphoid tissue, such as is apt to follow direct splenic exposures, is not always wise or safe, as a toxemia is easily induced thereby. That death has frequently resulted under such circumstances can not be denied. At any rate, such procedures are far from beneficial to the patient and are likely to lessen the chances of ultimate cure, for any conditions which tend to lower the general vitality may thereby give the factors causing the disease an opportunity to operate with increased vigor.

CLINICAL OBSERVATIONS.

Five patients have been treated so far by the method herein suggested, and the clinical results have, on the whole, fully justified the change. It is too early to make deductions as to the ultimate success of the method or the special technic we have adopted, but there is every reason to believe that the final results will be superior to those heretofore realized, and especially in connection with the splenomedullary type of the disease. One result of our experience and observations has been a decided change of view in regard to many points in connection with the treatment. For example, comparatively little attention is now paid to the total leucocyte count as an index to the effect of the treatment on the disease, while far more is given to the differential counts and to the general qualities of the blood. Our rules are not influenced by a tendency of the leucocytosis to remain high for a comparatively long period after the treatment has been started, and our efforts are now directed, the least of all, to a reduction

of the count, and, in fact, a rapid and decided drop is considered most undesirable.

THE TECHNIC.

The details of the technic as now carried out are based largely on our clinical experience and observations. The following points are to be considered in its application:

1. The length of each exposure.
2. The frequency of exposure.
3. Avoidance of toxic reactions.
4. Systematic applications.
5. Avoidance of early splenic exposures.
6. The duration of the entire treatment.

1. The duration of our standard exposure is based primarily on the observations of Heineke, that the shortest time in which any perceptible degenerative changes in the lymphoid tissues of a moderate sized dog or rabbit could be induced was fifteen minutes, and that the reaction of bone-marrow in a given time was much less marked in all instances. The reaction of the same tissues in man is, of course, much less prompt and less decided. An attempt to bring about any perceptible degenerative changes in these tissues by a single application to a leukemic patient would be dangerous, and probably fatal, but our experience has shown that an exposure of fifteen minutes to the bone-marrow, under standard conditions, is not attended with any risk, as a rule, and is sufficient to produce some reaction. On the other hand, even this is sometimes too long an exposure, especially when applying the rays near the splenic region, or sometimes over the knees even, as will be shown later.

Heineke and Warthin observed that a single short exposure produced no perceptible reaction in the bone-marrow of animals, while repeated short exposures did so ultimately. They also found that regeneration was possible if the applications were discontinued. Therefore, in view of these facts, it would seem necessary to expose a given area repeatedly before leaving it to take up another part of the body. In the beginning it was our custom to expose each separate area three times in succession, but later observations have led to a slight modification of this rule.

Taking fifteen minutes as the standard length of exposure, the actual duration of each application depends on the particular circumstances attending each individual case. The duration of exposure is a matter which requires careful consideration for the reason that it is an indefinite factor, subject to more or less variation in the determination of a standard dosage. Under ordinary circumstances the slight variations in the therapeutic *x*-ray dose, arising from the differences in apparatus, are unimportant, but in the treatment of leukemia unusual accuracy is desirable. Time can not be an absolutely uniform unit, because, being under control as a measurable quantity, it must be the factor to be adjusted in order to allow for the uncontrollable variations in the other factors which determine the therapeutic dose. As there is no accurate method for determining directly the volume of the rays generated in a tube, this unit must be measured approximately, and is most accurately estimated from the relations of the vacuum of the tube and the milliamperage of the current delivered to it.

As the quality of the rays also depends more or less on the vacuum of the tube, and as the quality or degree of penetration must be as nearly uniform as is possible in the treatment of leukemia, it follows that the vacuum will not be a very variable factor, because it must, of necessity, be a uniform unit, and it is more or less controllable as such. A "four-inch" vacuum is about right for the purpose, and there should be a tendency for it to rise and not to fall. Such a vacuum must be maintained by automatic regulation. If the tube and its vacuum can be made a uniform unit it is very easy to make the measurement of the current the same for all cases.

The only important variable factor now remaining is the variety of interrupter used. All other factors remaining practically the same, there is undoubtedly some difference in the resulting doses when a mechanical spring interrupter is used and when a Wehnelt instrument is employed. The adjustment of this difference is largely a matter of experiment and experience. Marked variations in distance, of course, necessitate corresponding changes in the time unit.

2. The frequency of the applications is a matter requiring some consideration, although its importance was not evident to us at first. In our experience daily exposures, when it is possible to give them that often and they are not followed by undesirable effects, are advisable, for the reason that it requires a considerable period of time to cover the entire body, and it is not best to allow too long an interval to elapse between the time one area has received its series until its turn comes again for the next. Regeneration might take place were this interval too long, or at least the cells might have a chance to recover from the effects of the previous applications. This form of treatment requires a much longer time than the older method, but by making the applications daily its duration may be shortened several weeks or even months. At any rate, our best results have been noted in those cases which have received daily exposures.

3. There is reason to believe that any exposure which produces the slightest toxic manifestations may be harmful rather than beneficial. Toxemia is most likely to follow direct applications to the spleen or enlarged lymph glands, but it sometimes follows exposures to the bones alone, especially when they are made over the knees. Evidences of toxemia early in the course of the treatment have been taken as a warning, first, to keep away from the spleen for some time, and, second, to shorten the applications. If toxemia still follows, the prognosis is unfavorable.

It is not likely that any benefit is to be derived from the treatment of acute cases, whether the attack is primary or a relapse. The same may be said of those in which there are evidences of a marked toxemia. In fact, Roentgen-ray applications may shorten life in such cases.

4. To be of any real value this treatment must be systematic. The exposures to the different areas of the body must be made with some definite regularity and system. Heretofore when the bones were exposed, in connection with the splenic applications, either it was carried out in a more or less general exposure of the patient's entire body, or only a very few areas received direct applications, which were usually of comparatively short duration. In the former instance the element of distance was disregarded and uniformity was out of the question. Even if such widespread applications were of sufficient duration to induce any reaction in the bone-marrow the exposure of such a large extent of surface at one time would have incurred risk in many instances.

AREAS FOR EXPOSURE.

In any method of applying the treatment to the bone-marrow the body should first be divided into definite regions, and each of these should be exposed with regularity. The manner in which we have mapped out the areas for exposure is as follows:

(1) The feet, ankles and lower halves of the legs.

(2) From the middle of the legs to the middle of the thighs.

(3) The right half of the abdomen and pelvis and the upper half of the right thigh.

(4) The corresponding area on the left side, carefully avoiding the spleen in the earlier applications, but including its lower half later on.

(5) The right half of the thorax and the right shoulder, including as much of the upper extremity as possible.

(6) The corresponding area of the left side, again avoiding the spleen early, but including its upper half later on.

(7) Later in the treatment the entire thorax and both shoulders are often included in one application, making the proper correction in time for the increase in distance. In stout subjects it may be advisable to treat this part of the body posteriorly as well.

(8) When it is safe to expose the entire spleen it is advisable to approach it from the back and thus include the lumbar spine and the posterior aspect of the pelvis.

Each of these regions is treated in rotation and receives three successive exposures. For reasons to be mentioned later, a fourth is sometimes given. By dividing the body up in this way, and making the relations of distances and exposures uniform, it becomes a simple matter to give each portion of the skeleton its proper share of treatment. We have assumed that it is safer to expose every portion of the skeleton, except the cranium. If it is found necessary to expose the head the patient must accept the risk of a possible loss of the hair.

5. In direct contrast to the older method of directly exposing the spleen from the start, our experience has demonstrated that this is an unwise procedure. This does not mean that the spleen should never be exposed, for to avoid it at all times would be almost impossible, and, besides, more or less exposure is no doubt necessary, but should not be attempted while the organ is still very large and the leucocytosis is still high. It is best to wait until the count is materially reduced and the patient's general condition has improved considerably. This mass of lymphatic tissue is far too susceptible to *x*-ray influence, and the patient is not in a condition at first to stand the strain imposed by its exposure.

In all our cases except one the spleen has diminished in size steadily, and with comparative rapidity without direct exposure, while the applications were confined strictly to the bones. Direct exposure to the spleen, however, caused a more rapid decrease in size. It has been clearly demonstrated, in our lymphatic case that early splenic exposures are harmful. This patient had been previously under the care of another physician, who gave him three or four exposures directly over the spleen, and he at once became much worse, while following the bone exposures alone, after he came under our care, the leucocyte count dropped steadily, his general condition from the start showed a corresponding improvement, and the spleen steadily diminished in size. During this time every precaution was taken not to expose the enlarged lymph glands. Any application near the spleen, when it would be more or less in the path of stray rays, was immediately followed by toxic symptoms. Similar manifestations were associated with the earlier exposures to the lymph glands, unless the applications were made much shorter than usual.[1]

The appropriate time for beginning splenic exposures depends on the circumstances attending the case. It has been our rule to go over the entire body at least twice with the bone exposures, keeping well away from the spleen, before considering its exposure. In the average case, with moderate leucocytosis, moderate splenic enlargement, and little or no evidence of toxemia, it may be safe to try the experiment of including the lower half of the spleen with the left hip during the third series, provided the patient's general condition has improved to a considerable extent. We have found it best to try an exposure of only eight minutes, or not more than ten at first, and then if there is no unfavorable reaction a second application may be given, followed by the third if all goes well. We never expose any part of the spleen for the full fifteen minutes until much later.

The reason for these precautions has been demonstrated practically in connection with Dr. Stengel's patient, who has the first to be treated by this method. Being himself a physician, he was in a position to render valuable assistance in the experimental stage of our work. Early in the course of his treatment he found that thirteen minutes' exposure over half or more of the spleen would be followed in from two to six hours by mild toxic symptoms, accompanied by the appearance of a trace of albumin in the urine; fourteen minutes made him decidedly toxic, and fifteen minutes was not then tried. Later on we found that fourteen minutes was the border line, and at the present time he can stand a fifteen minutes' exposure without the slightest evidence of toxic manifestations. We have now reached the point of seventeen minutes, although the first time it was tried there was a suspicion of toxemia, but no albumin appeared in the urine.

This patient has observed that the series of splenic exposures invariably resulted in considerable local disturbance, which he attributed to a shrinking of the spleen, and sometimes there was an additional sensation which he thought might be due to the breaking up of a slight adhesion. These phenomena, which were noted only after the institution of the present method of treatment, were always accompanied by a decided increase in the leucocytosis, but after the third exposure of the series the count usually dropped to a point as low as or even lower than it was before. Previously the patient had received seventeen direct applications to the spleen. These exposures were accompanied by a very decided progressive drop in the leucocytosis, without any appreciable diminution in the size of the spleen, which would tend to prove that these early, direct, splenic applications destroyed only those lymphocytes circulating in the blood. With the institution of the bone treatment the count soon rose again, but the general condition began to improve at once and continued to do so. With this early reduction of the leucocyte count there was no corresponding reduction in the number of myelocytes, their percentage rising proportionately.

It should be borne in mind that the periods of time

1. This patient later became dissatisfied with our treatment, and went to another hospital, where his spleen and enlarged glands were again exposed in the old way. As a result, when he came back to us he was so much worse that *x*-ray treatment was contraindicated.

mentioned above are relative factors in the dosage and are not intended to be taken as uniform standards.

While the spleen still remains very large, it does not seem advisable to expose the entire organ at any one time, but this may be attempted with safety when the enlargement has diminished to a moderate size, provided other conditions do not contraindicate such a procedure. This would be at a comparatively late stage in the treatment, after the leucocyte count has become steady and is not subject to wide variations, and there has been a decided improvement in the patient's general condition.

There is no reason to fear any damage to the kidneys from their direct exposure to the rays while making applications to the spleen through the back. It has been satisfactorily proved that all renal complications which have arisen during the treatment of leukemic patients have resulted from oxer-taxation in the elimination of waste tissue products and have not been due to direct *x*-ray exposure.

6. The point about which we acknowledge the greatest indecision is the appropriate time to stop treatment altogether. If we stop too soon, before the elimination of the cause is complete, we run the risk of a possible regeneration of leukemic tissue, with a resulting relapse. Experience has demonstrated that the prognosis in the treatment of relapses is far less favorable than in the case of a primary attack. And at any rate, we would have the same ground to go over again. On the other hand, it is not desirable to prolong the treatment unnecessarily, at the expense of both time and money to the patient, and with the possibility that overexposure may be productive of harmful results. Our experience has not yet decided this point.

We have noted that toward the apparent end of the treatment the leucocyte count falls very slowly, but it becomes quite steady. One of the evils of splenic treatment was the too early reduction of the leucocytosis, which, when it reached a numerically normal figure, was taken as an indication of a symptomatic cure long before it was possible for the disease to have been eradicated. A continuance of the treatment resulted in a subnormal count, which might be harmful. No such confusion exists in connection with the bone-marrow treatment. We are paying less and less attention to the leucocytosis, for it is by no means an accurate index of the patient's condition. For example, one of our patients has had a count hovering steadily between 20,000 and 26,000 for several weeks, and we consider him very nearly cured. In another case the count has been under 20,000 for nearly as long, and yet the patient is very far from being well. In the splenomyelogenous cases it is most important that the myelocytes be driven out of the blood and that they remain out.

It is mentioned elsewhere that every time a new area is exposed for its series a rise in the leucocyte count follows the first or the second application. We have noticed that this tendency diminishes and the count becomes more steady as the patient's general condition approaches the normal. Earlier in the treatment the count frequently does not come down after the third application to where it was before the first treatment of that part. Under such circumstances we repeat the exposures until there is a satisfactory drop. As a rule, only one additional application is required.

A reduction of the leucocytosis to a moderately low count, with very little fluctuation, a reduction of the spleen to nearly a normal size, and a return of the general condition to normal may be taken as indications to let up in the treatment, but applications would best not be stopped altogether for some time. While any splenic enlargement persists there is apt to be a slight leucocytosis. It would hardly seem wise to stop the treatment while the spleen still shows a tendency to diminish in size, but it must be remembered that an enormously enlarged spleen can rarely be reduced to a normal size by treatment.

Not only is it a serious mistake to stop treatment too soon, but it is equally as injudicious to allow long intervals of rest during the course of the treatment. There is reason to believe that the latter was the cause of a fatal result in one of our cases. The patient was permitted to take a rest of ten days, but no longer, at the seashore. She remained there for nearly a month, had an acute relapse, and soon died. Under certain circumstances some benefit may be derived from a short restful vacation of a week or ten days, but no longer than that.

Judging from our experience, it would not be safe in the average case to stop the treatment short of 100 applications, and in some instances as many as 200 might be necessary. Daily exposures may diminish the total number of applications necessary.

GENERAL CONCLUSIONS.

The reason for presenting such a detailed discussion on this subject is the desire to give to others the full benefit of our experience in the application of what promises to be a more successful method of treating leukemia. As clinical reports are lengthy and uninteresting, and as there are already on record a sufficient number of them referring to the *x*-ray treatment of this disease to give a fairly correct idea of the results in general, detailed reports of our limited number of cases will be omitted. The following conclusions are a résumé of what we have accomplished so far in the treatment of five cases by this method, together with the more important observations that have been made:

1. The primary results of this method are equally as good as those of the one hitherto employed.

2. The treatment herein suggested is more rational because it is directed against the primary focus of the disease, so far as it is known, and not against a secondary manifestation.

3. Toxemia resulting from the treatment may be avoided, and the patient's general condition is, on the whole, better from the start.

4. Under exposures to the bone-marrow the enlarged spleen is diminished in size just as it is under direct splenic applications, only the process is somewhat slower.

5. Although this treatment requires a much longer period of time, the misleading tendency of a comparatively quick symptomatic cure, such as follows direct splenic exposures, is avoided. Applications confined mainly to the spleen reduce the size of that organ, destroy the leucocytes in the circulation, including the myelocytes, and possibly have some inhibitory influence, secondarily, on the cause, and hold the disease in check, leading to an impression that the case is cured, whereas statistics show that this is seldom the case. Applications to the bone-marrow also reduce the size of the spleen and destroy the leucocytes circulating in the blood, but, in addition, they are more likely to reach and remove the cause of the disease.

6. The spleen should be exposed at some time, but never until it is considerably reduced in size and the patient's general condition is markedly improved, and even then it should be done with caution

7. The comparatively slow reduction in the size of the spleen, while it is not being directly treated, may be a factor in keeping the leucocyte count high. This is in a measure advantageous, as it guards against stopping the treatment too soon. The count will not become normal while the spleen is still enlarged and is still diminishing in size.

8. That actual destruction of the splenic tissue results from the cumulative effect of direct *x*-ray exposures is, in a measure, disproved by the following observations:

(a) The spleen is diminished in size by applications to the bones alone.

(b) In all of our cases which have reacted favorably to the treatment, it has been noted that after the spleen has been included in the applications, the first or second exposure in each series is usually followed by a decided rise in the count, associated very often with evidences of more or less diminution in the size of the tumor. A third or fourth exposure usually brings the count down again by a destruction of the lymphocytes in the circulation. These facts would seem to indicate some direct connection between the decrease in the size of the spleen and the increase in leucocytosis and lymphocyte percentage.

(c) In the first patient seventeen, almost daily, splenic applications of short duration, made before starting the bone-marrow treatment, reduced the leucocyte count from 386,000 to 133,000, with a relative increase in myelocytes from 16⅔ per cent. to 25½ per cent., but there was comparatively little diminution in the size of the spleen.

(d) In the two unfavorable cases with acute relapses, repeated direct applications had no effect whatever on the spleen, which continued to grow larger. At the same time the leucocyte count rose rapidly, although the first one or two direct splenic exposures were followed by a decided drop, which lasted for a day or two only. It may be well to explain that the reason for these direct splenic exposures was the fact that bone-marrow applications had no effect whatever in checking the extremely rapid enlargements of these spleens, and it was hoped that comparatively short and safe direct exposures might have some such influence. So rapid was the enlargement in one of these two cases that death occurred very suddenly, following phenomena which may have been due to a rupture of the spleen.

9. A peculiarity of this treatment is the fact that the patient may feel perfectly well, but still have a moderately high leucocytosis and a comparatively large spleen. In our first case, after 112 treatments during a period of ten months, the count still averages from 75,000 to 100,000, with 3 to 4 per cent. of myelocytes, and the spleen is still moderately large, but the patient feels as well as he ever did in his life, and is able to attend to all of his work. He has been in this condition for the past four months. His leucocytosis decreases very slowly, but a slight drop is noted each time a new area is exposed in its turn, as compared to the count at the time of the previous series to the same part. The only explanation for this long continued high leucocytosis is that in its slow but steady decrease in size the spleen, which receives but comparatively few direct exposures, pours out large numbers of lymphocytes into the circulation, where they are destroyed slowly. The presence of 3 to 4 per cent. of myelocytes shows that this patient is still far from well.

10. Daily exposures, when not contraindicated, may frequently yield quicker and better results. The slow progress made by the case just mentioned may be accounted for by the fact that he received but three treatments per week, and for a while only two. Our most favorable case was treated daily.

11. All cases will not respond to even this method of treatment. In acute primary attacks and relapses *x*-ray treatment is perhaps, as a rule, contraindicated.

12. Lymphatic cases also respond well to this method of treatment. It is advisable to observe the same precautions in regard to applications to the glands as those mentioned in connection with the spleen.

13. Cessation of treatment for long intervals is to be guarded against, especially in the early stages. Even short interruptions are not advisable until the disease is well under control.

14. The proper time to stop treatment is still a somewhat uncertain question. The frequency of the applications should not be lessened until the general condition is normal and the size of the spleen and the leucocyte count nearly so. It would seem wiser to stop gradually rather than abruptly.

15. The leucocyte count, *per se*, becomes a matter of minor importance, but the differential count is always one of the important indices to the effect of the treatment. The failure of the count to drop, after the third application in the series to any particular area, to a point as low as or lower than before the first, has been taken of late as an indication to give more than the three customary exposures to that part. As conditions begin to indicate the approach of a cure this tendency of the leucocytosis to increase becomes less marked.

16. The distribution of the applications over almost the entire body renders the risk of a severe dermatitis, with ordinary care, very slight.

17. The bone pains, noted especially in splenomedullary cases, are relieved early by this method of treatment.

COMPARATIVE POTENCY OF HYOSCIN AND SCOPOLAMIN HYDROBROMID IN REFRACTION WORK.*

WENDELL REBER, M.D.
PHILADELPHIA.

Some years age in some notes[1] on the mydriatic alkaloids I made mention of a youth of 16 with emmetropic eyes on whom I had tested the effects of hyoscin hydrobromid and scopolamin hydrobromid. One drop of a 1/10 per cent. solution of the hyoscin salt was used in the right eye and one drop of a 1/10 per cent. solution of the scopolamin salt was used in the left eye. The effect of the two drugs on the pupil is shown in Figure 1 and on the ciliary muscle in Figure 2. From these results I leaned to the conclusion that the two drugs were practically identical in action and, therefore, interchangeable, and I so put myself on record at that time. For some time afterward I ordered 1/10 per cent. of solutions of scopolamin or hyoscin hydrobromid indiscriminately in my office refraction work, but it was not long before the scopolamin cases began to show uncertain cycloplegia, while the hyoscin cases seemed to be much surer in result. Cases were, therefore, sought out that offered favorable conditions for further pharmacodynamic comparative tests of the two drugs. Within

*Read in the Section on Ophthalmology of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. American Jour. Phar., 1899.

two years three persons were found who were so doubtful about the acceptance of even a plus 0.25 D. sphere (under cycloplegia) as to fit them for these tests. One showed two degrees of esophoria, one showed one degree of esophoria and one lateral balance. The first was 26 years of age, the second 22 years of age and the third 20 years of age. In the right eye of each of these patients was instilled one drop of a 1/10 per cent. solution of hyoscin hydrobromid (Merck) and in the left eye of each patient one drop of a 1/10 per cent. solution of scopolamin hydrobromid (Merck). These solutions were prepared for me by Messrs. Shinn & Kirk, of

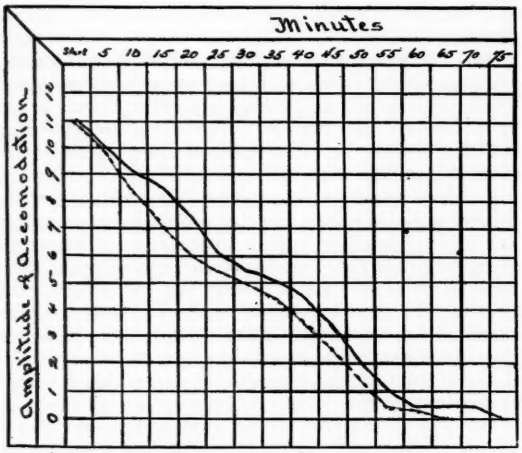

Fig. 1.—Effect on accommodation; T. K., aged 16. Scopolamin solid; hyoscin dotted.

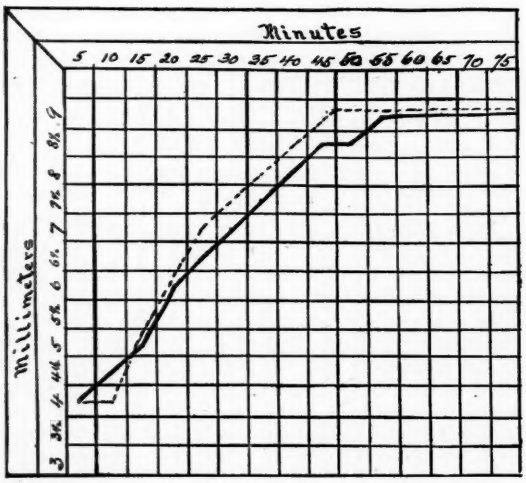

Fig. 2.—Effect on pupil. Scopolamin solid; hyoscin dotted.

Philadelphia, who dissolved the drug in saturated boric acid solution and then filtered the solution. Mr. Kirk himself exercised particular care in their preparation, as he had been told that they were to be used for experimental purposes. The two solutions were stood for three minutes in a flat-bottomed shallow bowl of water brought to a temperature of 80 F. A standard dropper was used, and after use in the right eye was carefully washed out before using for the left eye. Hyoscin was used in each case in the right eye and scopolamin in the left eye and all other minutiæ so arranged as to eliminate the possible sources of error. The effect on the pupil in each case is shown in Figures 3, 4 and 5, while the effect on the range of accommodation in each eye is shown in Figures 6, 7 and 8.

PUPILS.

By reference to the figures it will be seen that the average time of beginning action on the pupil was ten minutes for both of the drugs in all of the eyes. Full dilation of the pupil occurred in the 22- and 26-year-old females in 30 minutes with hyoscin and in the 20-year-old male in 45 minutes. This may be attributed to the fact that the sympathetic nervous system is much more active in females than in males. The same difference in pupillary response was observable with the scopolamin. In the two females full pupillary dilation under scopolamin occurred in 40 minutes and in the male in 60 minutes.

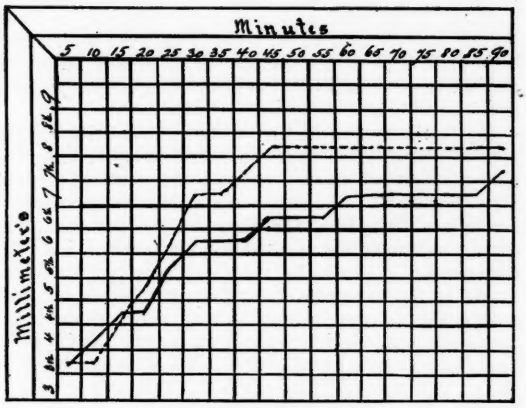

Fig. 3.—Effect on pupil.

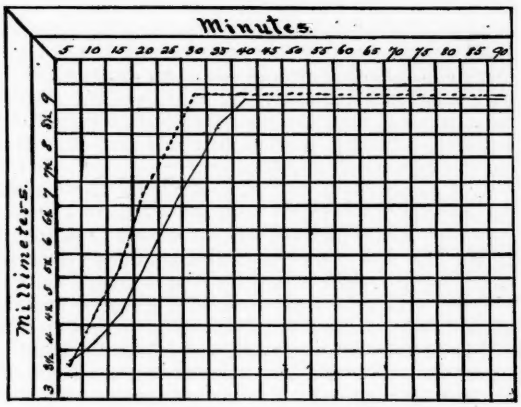

Fig. 4.—Effect on pupil.

The pupils of the 20-year-old male were 0.5 mm. smaller in both eyes at the start.

According to these findings, therefore, hyoscin showed an average time of 35 minutes to produce full pupillary dilation in the three cases, while scopolamin showed an average time of 47 minutes to produce the same result.

ACCOMMODATION.

In Figures 6, 7 and 8 is plotted by curves the effect on the accommodation of each eye of the three cases tested.

The curve indicating the hyoscin effect is shown by the broken line, while a solid line shows the scopolamin effect on the same patient.

In Figure 6 it will be noted that full cycloplegia was established in the right eye by one drop of the 1/10 per cent. hyoscin solution in 50 minutes, while an equal amount of scopolamin salt in the other eye did not bring about full cycloplegia until the expiration of 70 minutes.

In Figure 2 the onset of full cycloplegia also occurred in 60 minutes, while scopolamin in equal dose required 120 minutes to produce the same effect. In Figure 8 hyoscin produced full cycloplegia in 50 minutes and

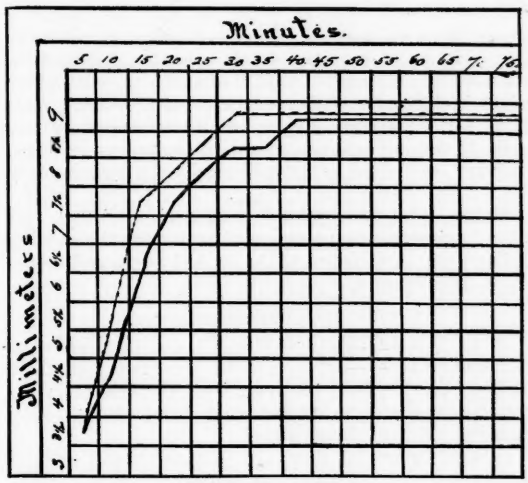

Fig. 5.—Effect on pupil.

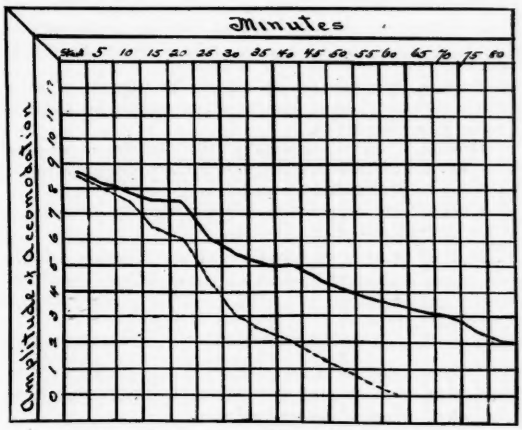

Fig. 7.—Effect on accommodation; Miss C., aged 22.

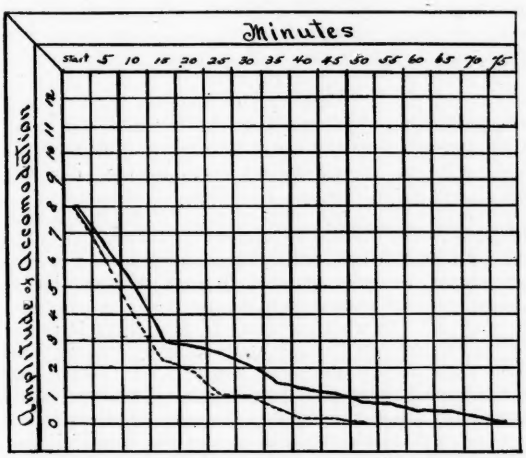

Fig. 6.—Effect on accommodation; Miss M., aged 26.

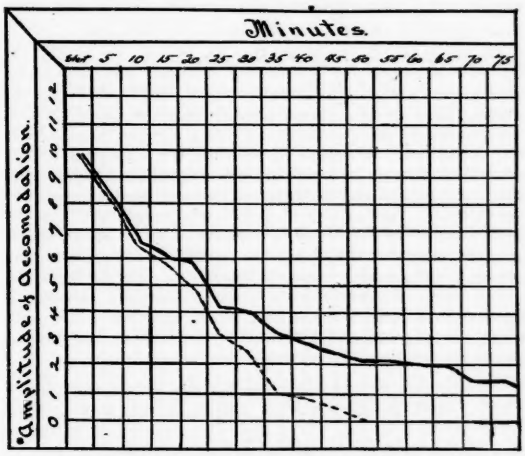

Fig. 8.—Effect on accommodation; W. J., aged 20.

scopolamin in 100 minutes. If to these 3 cases we add the results in Case 1 above alluded to (Fig. 2) we find that:

The average time for onset of full cycloplegia under hyoscin (1/10 per cent. solution) in 4 cases was 59 minutes.

The average time for onset of full cyloplegia under scopolamin (1/10 per cent. solution) in 4 cases was 92 minutes.

So that the relative pharmacodynamic power of hyoscin hydrobromid and scopolamin hydrobromid as used in ordinary office work may be said to be somewhere close to 59:92. Or, to reduce it to the commoner form of statement, hyoscin in these test cases showed itself approximately 50 per cent. more potent than scopolamin in producing cycloplegia for refraction work. So much for the academic phase of the matter which seems to be rather at variance with the claims which chemistry makes for these two drugs.

CHEMICAL CONSIDERATIONS.

Since 1833, when Phillip Geiger announced that, along with Hesse, he had succeeded in obtaining from some domestic poisonous plants the alkaloids atropin, hyoscyamin and daturin, down to the present day there have been not only numerous additions to this alkaloidal family, but there has continued a more or less animated discussion as to the properties of the several principles and the identity or non-identity of a number of them. Among the many alkaloids, acids and bases that have been derived from the Solanaceæ may be mentioned atropin, tropin, atropic acid, tropic acid, hyoscin, hyoscic acid, duboisin, homatropin, oxytropin, scopolamin, daturin, scopolin, oscin and atrosin.

One stands bewildered at the multiplicity and seeming interchangeability of the various bases and salts, and this confusion was not a little confounded when hyoscin hydrobromid was made official in the third edition of the

German Pharmacopeia and the same chemical was designated as scopolamin (by the influence of E. Schmidt) in the 1895 supplement to the same.

Pinner[2] makes the following statements concerning the chemistry of this alkaloid family:

1. The different members of the Solonaceæ, namely, atropa, hyoscyamus, datura, mandragora, solanum and anisodus, contain two principal alkaloids, one of the composition of $C_{17}H_{23}NO_3$, the other of the composition $C_{17}H_{21}NO_4$, so that the second may be viewed as an oxidation product of the first.

2. The first mentioned is hyoscyamin, which is easily convertible by alkalies into atropin. While the latter principle may exist as such in small quantities in the above-mentioned species, it is altogether possible that hyoscyamin is the form the alkaloid takes in the living plant, while atropin is the form in which it appears in the dead plant.

3. The second base is hyoscin, or what amounts to the same thing—scopolamin. It would appear that in the presence of alkalies, hyoscin undergoes a change similar to that of hyoscyamin, and then becomes inactive atroscin.

4. Further, hyoscyamin and atropin by separation of a molecule of water, become apo-atropin or atropamin, which is isomeric with belladonnin.

5. Hyoscin is derived principally from the root of scopolia atropoides, and contains in addition to hyoscin, inactive atroscin and traces of hyoscyamin and atropin.

6. Finally, there is present in duboisin, not only hyoscyamin, but also hyoscin and other alkaloids.

The 1900 edition of the U. S. Pharmacopeia affords no help in the attempt to clear up the question. For both hyoscin and scopolamin hydrobromid it gives the formula $HBrC_{17}H_{21}NO_4 + 3(H_2O) = 434.92$.

Fifteen works on materia medica and therapeutics were gone through and every one of them stated in substance that hyoscin and scopolamin hydrobromid were identical of composition and effect.

As Merck's chemicals had been used in the experiments, the firm of Merck & Co. in New York City were then appealed to and they wrote as follows:

Referring to your favor of the 9th instant, we would say that the formulas for hyoscin hydrobromid and scopolamin hydrobromid are alike as stated in the U. S. Pharmacopeia for 1900. This view of chemical identity seems to be pretty generally accepted now, although ten years ago the question was very unsettled. It occurs to us that the difference in the strength of hyoscin hydrobromid and scopolamin hydrobromid, which you noticed in your experiments, may be due in part to the fact that some makes of scopolamin hydrobromid on the market are of comparatively low specific rotatory power, and it has been held that the higher the specific rotatory power, the greater the physiologic effect of the product. For instance, the specific rotatory power of scopolamin hydrobromid (Merck) is about —20 degrees, whereas that of another make tested only about —6 degrees, and our works report that some brands test as low even as —2 degrees.

As this did not entirely satisfy the conditions under which the experiments were made, Merck & Co. were again written to the effect that the hyoscin and scopolamin salts used in the test were both of their own manufacture and the specific rotatory power of hyoscin hydrobromid was asked for. Merck & Co. again replied, stating this time that scopolamin hydrobromid (Merck) and hyoscin hydrobromid (Merck) were both of a specific rotary power of —20 degrees.

This leaves the matter precisely where it was in the beginning, namely: that with two drugs said to be absolutely identical as to clinical effect, pharmacodyamic power, molecular build and reaction with the polariscope, there should seem to be a more or less uniform difference in potency when tested by the delicate accommodation reaction.[3]

There remains as a possible explanation the parallel fact of chemical identity but pharmacodyamic difference in the effect of caffein and thein [both of the formula $C_8H_{10}N_4O_2(C_2H_4O_2)_2$], also of cocain and stovain, which are said to be chemical isomers and yet exhibit wide difference in their action. The familiar example of the kaleidoscope naturally occurs to one pondering such problems. Although the number of pieces of glass in the instrument never changes, yet how varied the changes in the effect to be had by rotating the instrument. It requires but a slight stretch of the imagination to believe that some such similar principle may be operative among chemical isomers. That is to say that, although they may be of the same total molecular constitution, yet a different arrangement of the various molecules may result in difference of therapeutic effect or biologic reaction, just as one dozen dry or wet batteries produce currents of varying qualities according to the way in which they are connected, a fact utilized by electricians every day.

Unless some such possible explanation as that just offered exists there is no means of explaining the seeming difference in the reaction of the eye to hyoscin and scopolamin hydrobromid.

CLINICAL CONSIDERATIONS.

In the last analysis it is always the clinical phase of such studies that interests us most. Just how and where shall we use the facts resulting from the laboratory investigation; that is to say, the pharmacodynamic and the chemical study of these drugs?

It is probable that there is to-day no subject in ophthalmic science on which there is more diversity of opinion than that of which is the cycloplegic that stands for maximum of effect and minimum of irritation to the eye, minimum inconvenience to the patient and surgeon, and minimum period of incapacity to the patient. This would be opening up the whole question of the various mydriatics and their various methods of use by different workers, which is not my desire. Suffice it to say that semi-occasionally I use homatropin and infrequently I use atropin. In the last six years, however, in something like 2,000 cases of refraction in private work I have used a 1/10 per cent. solution of hyoscin hydrobromate (½ gr. to the oz.), containing cocain also in the strength of 1/5 per cent., and not once have I seen a pronounced toxemia, by which I mean sufficient inconvenience of the patient to make him too uncomfortable to go home. In about one case in fifty there is rather marked flushing of the face, quickening of the pulse and some slight vertigo, not more, however, than I have seen a number of times with homatropin. This was in all probability due to the fact that the patient did not follow the instructions about pressing over the canaliculi five minutes after the drug was instilled. Neglect of this precaution invites toxemia with whatever mydriatic is used. The hyoscin has been used quite as freely in little children as in adults and never have I seen a pronounced general reaction in these little ones. It is my custom to have the patient have the solution instilled once or twice the evening before and twice the morning of the consultation. This is sometimes reinforced by another drop after the patient reaches the office. For office instillation the use of the solution is preceded five minutes by one drop

2. Centrbl. f. praktische Augenheilkunde, January, 1893.

3. Incidentally it might be noted that in Merck's price list for October, 1906, under the price given for hyoscin hydrobromid, appears the statement that "Hyoscin (Merck) and its preparations are all obtained from hyoscyamus and not from scopolia."

of a 2 per cent. cocain solution, which is always warmed, as are the hyoscin drops also. Two such hyoscin instillations are made half an hour apart, and any time one to two hours after the first instillation the patient may be satisfactorily tested for errors of refraction in the vast majority of cases. A very small percentage (not more than 1 per cent. to 2 per cent.) will thus show that they need atropin. Accommodation sufficient for the purposes of all but the most exacting near work is generally re-established by the end of 48 to 60 hours. That is to say, that if a patient is measured on Saturday he may use his eyes somewhat for near work on Monday and pretty much as he is usually accustomed to on Tuesday.

There are those who like to give their patients a weak eserin solution to hasten the return of accommodation, but except under dire pressure I dislike exceedingly to do this because of my belief that much of the precious therapeutic action of the cycloplegic is thus done away with. Few patients are as busy or pressed for time as they think they are, and if the facts concerning their eyes are rightfully and tactfully put before them there are few who will not abide by their ophthalmic counselor's advice.

It is almost needless to say that I would be delighted to report every eye-strain patient's eyes under atropin because of its twofold action of complete cycloplegia and perfect rest to all the internal ocular structures. But as the tension of life in this year of grace 1907 makes it impossible to realize this ideal the search must be for the next best thing, and that, in my humble estimation, is to be found either in scopolamin hydrobromid in 1/10 per cent. solution, or, as I prefer, hyoscin hydrobromid in 1/10 per cent. solution.

It is always a matter for regret to have to admit that the number of cases submitted to experiment is so small as to leave room for doubt as to the accuracy of the conclusions drawn from the work. The foregoing work is, in a sense, open to this criticism, and yet cases suitable for this kind of experiment do not occur frequently, and even when found such patients are frequently unwilling to submit to the inconvenience of a repeated mydriasis, no matter how valuable the data that might issue therefrom. The claim is, therefore, made that the results herein set forth are entitled to consideration and may be accepted as working results until such time as some other worker by a larger series of cases may be in a position to rise and disprove them.

1212 Spruce Street.

DISCUSSION.

DR. ALBERT E. BULSON, JR., Fort Wayne, Ind., agreed with Dr. Reber that hyoscin is more effective than scopolamin as a cycloplegic. For the last four or five years he has used hyoscin almost exclusively as a cycloplegic and found it more reliable than homatropin and more evanescent than atropin. He did not concur in the statement that patients can use the eyes comfortably within forty-eight hours. The majority of his patients complain that accommodation is so paralyzed for seventy-two hours, and sometimes longer, that reading is an impossibility. Some patients even complain of the effect as late as the fifth day, but even this prolonged action, he said, is an advantage over atropin which generally lasts ten days to two weeks. Children are less susceptible to systemic effects of the drug, and in Dr. Bulson's experience they show toxic symptoms less often and to less extent than adults.

But, Dr. Bulson, said, it is absurd to think that toxic effects will not occasionally occur, notwithstanding the utmost caution. In an experience of several thousand cases in which hyoscin was employed, he has never seen any alarming symptoms, though frequently he noted toxic effects which warranted careful observation of the patient for some hours. For this reason he is opposed to giving the patient a prescription for the drug. If unpleasant effects are to occur he prefers to have the patient in his office under observation, and thus be able to overcome any embarrassing complications which might arise. The strength of the hyoscin solution should never exceed 1 per cent. As a routine practice, Dr. Bulson uses it in the strength of ½ per cent. solution.

DR. S. D. RISLEY, Philadelphia, said that he was compelled to abandon the use of hyoscin many years ago, because of the severe constitutional effect. Other points which greatly interested him are the peculiar isometric properties of duboisin, homatropin, atropin and sulphate of hyoscyamin. While chemically indentical, they produce very different physiologic results, especially in the duration of the paralysis of accommodation.

There is frequently great difference in the results obtained by different specimens of the same drug, and when discussing the matter with a leading chemist Dr. Risley learned that there are curious differences in the alkaloids of belladonna and hyoscyamus due to different methods of manufacture. If extracted in the presence of an alkali, hyoscyamin becomes atropin. If extracted or placed in solution with too great heat, the physiologic properties are materially altered, and their peculiarity in polarizing light is changed.

DR. CHARLES A. OLIVER, Philadelphia, has had considerable experience in the experimental study of cycloplegics. For certainty of results he has found it necessary to obtain the same form of eye, the same character of subject, a proved variety of drug, the best of test-object, and to do the work under similar conditions. He made each series of experiments at never less than four to six weeks apart. He has no faith in the present test-type methods of experiment. His experiments were done with the needle-point method. Hyoscin was found to be toxic to the extreme. Clinically, Dr. Oliver prefers atropin in public work; using three drops of it in 4 grains to the ounce strength solution the day before and the morning of examination. In private work he employs scopolamin in one-drop dosage, of a one-grain strength, one hour before the examination. Homatropin, he said, is practically useless to bring out very fine degrees, such as ⅛ D.

DR. G. H. PRICE, Nashville, asked in what strength and with what frequency the homatropin was used.

DR. OLIVER replied, two, four, six, eight grains at intervals of five minutes. In some of the cases he found full cycloplegia, but more often ocular irritation to such a degree that proper subjective answers could not be obtained.

DR. ALLEN GREENWOOD, Boston, has used hyoscin hydrobromid in ½ grain to the ounce solution, applied four times, and on one occasion a young lady developed acute mania in the waiting-room. Another little girl was maniacal all the way home in the car. Following these two experiences he stopped the use of hyoscin. Dr. Reber's method of using the hyoscin, he thought, would probably obviate such trouble.

DR. S. L. ZIEGLER, Philadelphia, cited a case in which the druggist used hyoscin in substitution for homatropin, one grain to half a dram. It was instilled seven times within the hour, and the patient was prostrated, as in the case related by Dr. Greenwood. Dr. Ziegler has seen a hypodermic injection of 1/100 of a grain produce ataxic delirium. Nevertheless, he thinks that in the strength used by Dr. Reber it is possible to secure cycloplegia without having such toxic effects manifested.

DR. WENDELL REBER, Philadelphia, does not believe that even after homatropin is there total disappearance of cycloplegia for from three to five days. In the case of hyoscin or scopolamin it may run six or seven days. Relative disappearance is a different thing; the patient may be able to work much sooner than that. He never hesitates to order hyoscin in ½ grain to the ounce solution. By remaining below the toxic quantity one will get good cycloplegia without toxemia. Some of the worst cases of toxemia he has ever seen have resulted from atropin. Of course, it must be used with care so as not to get the drug anywnere but in the eye. Dr. Reber considers duboisin to be more toxic than hyoscin as used in everyday work. He uses hyoscin in his private and hospital work, and believes it to be the best cycloplegic.

ACUTE PYELITIS DUE TO ACUTE APPENDICITIS.*

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Urinalysis is our most helpful clinical aid in the diagnosis of obscure abdominal maladies. Among the more significant findings are blood, pus, casts and bacteria in urinary tract disease; evidence of biliary pigment in diseases of the hepatic system; polyuria, increase in the specific gravity, and the presence of sugar in many of the pancreatic disturbances.

In a paper on the diagnosis of renal calculus[1] I emphasized the importance of the urinary examination and pointed out some of the abdominal conditions that must be borne in mind in making a differential diagnosis. Besides the other kidney diseases I mentioned gallstones, appendicitis, intestinal obstruction, pancreas stone colic, Henoch's purpura and angioneurotic edema. In a doubtful case where the diagnosis lies between ureter or kidney stone and appendicitis, or between urinary tract and hepatic tract diseases, the absence of urinary changes is often as positive an aid in diagnosis as is their presence in other conditions.

It is not uncommon to have acute attacks of appendiceal disease begin with a referred pain in the bladder region, and in more rare instances a pelvic peritonitis spreads from the appendix to the bladder walls, causing severe symptoms of cystitis. We occasionally see acute appendicitis accompanied by pus and blood in the urine when the clinical picture is one of septicemia or pyemia. The four cases which I wish to report do not belong to either of these classes, and I have seen no mention of similar cases in the literature. They are of particular significance because with the acute appendiceal attack the symptoms were not altogether clear, and in similar cases a dependence on the urinary findings to the exclusion of other diagnostic aids might end in disaster.

CASE 1.—This case was reported in full as Case 5 in the article on "Diagnosis of Renal Calculus," above referred to.

CASE 2.—*Patient.*—Mrs. K. M., aged 29, the wife of a physician in Oakland, Cal. I was consulted by this patient on Oct. 9, 1906, when I obtained the following history:

History.—Since her marriage three months previously the patient and her husband had been traveling in Europe. On September 3, five weeks before consulting me, while the patient was in Berlin, she was taken with a frequency of micturition which lasted for eight hours. Then suddenly a severe pain began posteriorly in the right lumbar and flank region and extended forward and down into the pelvis. Within two or three days the temperature rose as high as 103.5 F. There developed a large tender mass in the right kidney region. There was considerable spontaneous pain in the left kidney, but palpation here was negative. Her husband called in consultation a urologist of Berlin, and the question of operating on the right kidney was seriously considered. The temperature remained high for one week and the patient was confined to bed for two weeks. A specimen of urine catheterized from the bladder at this time contained a large amount of pus. She then got better rather suddenly and they proceeded to London. During her illness in Berlin she had a menstrual period at the regular time. The flow was not quite so free as usual. On arrival in London, about one week later, the bleeding began again, and for three weeks, up to the time she consulted me, there had been a more or less constant discharge of blood of chocolate color and offensive odor. While returning to America, the patient had another attack on shipboard. The pain during this second attack was located more in the umbilical region, but it also extended into the right side. The entire abdomen was very sore and the right kidney seemed swollen and tender. She had nausea but no vomiting.

From the history of this patient there was every reason to suppose that her attack was primarily of the kidney, but in taking her history there were certain minor details which made me think of the first patient in this series. The irregularity of menstruation made me suspect tubal pregnancy and think more strongly of appendicitis, as I have so frequently found tubal pregnancy dependent on former appendiceal inflammation.

Examination.—On examination, I found a free discharge of blood from the vagina, the uterus and left pelvic organs seemed normal, the pelvic organs of the right side were not palpated and there was no special tenderness in the right side. Suspecting a possible right tubal pregnancy, I did not persist with deep palpation on this side. The right kidney was easily palpated over its lower half and seemed of normal size and was not especially tender. The left kidney was not palpable. The patient was most tender in both lower quadrants of the abdomen, about where the ureters cross the pelvic brim. On returning from the examining room I told the husband that I suspected the case might possibly be primarily one of appendicitis. He did not conceal his surprise at this diagnosis, and on the patient's return he laughingly told her of the possibilities. She at once reminded him of several sharp attacks of indigestion that she had experienced during their voyage on the way to Europe when he had jokingly threatened to operate on her for appendicitis. On further inquiry I found that she had been treated for an attack of acute indigestion in March, a few months before her marriage. A catheterized specimen of urine centrifugalized and examined at once showed a few red blood corpuscles, no leucocytes, but many epithelial cells, mostly round and oval and mostly degenerated. There were also many epithelial and granular casts.

I sent the patient to the Church Home and predicted that the urine would clear up after a few days in bed, providing the case was one of primary appendicitis. They had come to my office immediately after a four-hour train trip from New York, and I considered that her urinary findings might be the last inuication of her recent attack while on board ship. On October 10, after twenty-four hours in bed, the urine was negative. On October 12 the urine was catheterized from the bladder and found to be negative. On October 12 the patient was examined with the cystoscope.

Cystoscopic Examination.—The bladder and both ureteral orifices were normal. The right ureter was catheterized with a 2.5 mm. renal catheter. This passed easily until it reached to about the region of the brim of the pelvis, where it was distinctly obstructed. On slightly forcing it the catheter passed the obstruction with a jump, and the patient exclaimed "Oh!" and said that she had pain in the appendix region. The catheter passed easily to the kidney and forcible injection was made with salt solution to the point of discomfort. Two drams returned, showing a normal-sized pelvis. On withdrawal of this catheter both husband and wife desired to have the possibility of a stone in the ureter excluded by the passage of a wax tip. The same sized catheter prepared with a wax tip passed to the kidney without appreciable obstruction. On looking at the ureteral orifice before passing this catheter it was seen to have a little streak of blood coming from it, probably the result of overcoming the stricture in the appendix region. The wax-tipped catheter returned without scratch marks.

Operation.—On October 15 an appendectomy was performed, together with the removal of a right tubal pregnancy. On examining the patient under ether the uterus and left ovary were found to be normal. On the right side a small soft mass about the size of a normal ovary was found adherent to the pelvic wall far back and high up. An incision was made through the right rectus muscle. On opening the peritoneal cavity a small quantity of free blood was found. Reaching down to the right ovarian region two small round bodies were felt, one of which was adherent to the pelvic wall over the site of the ureter in its course downward from the pelvic brim. This was easily detached and brought into the wound with the other round body, the ovary. The small

* Read before the College of Physicians of Pittsburg, Feb. 13, 1908.

1. THE JOURNAL A. M. A., March 24, 1906, 851.

round soft body before felt with the vaginal palpating finger was found to be a small unruptured tubal pregnancy mass in the isthmus of the tube. This had become attached by its upper aspect to the posterior pelvic wall, probably just over the ureter. The cecum with the appendix was found lying over the pelvic brim. The appendix was long, its proximal 5 cm. being large and containing a large fecal mold. Its next 3 cm. was undergoing obliteration and was firmly bound by dense adhesions to the fatty meso-appendix, and so to the bowels. Its distal 2 cm. was still more contracted and turned back on the main appendix, looking red and congested.

CASE 3.—*Patient.*—Miss L., aged 19, was referred to me on Dec. 9, 1906, by Dr. E. R. Strobel.

History.—She had just returned from a northern trip, and on my visit the patient was objecting to a further confinement in bed, as she was feeling perfectly well except for slight soreness and a "drawn feeling" in the lower right side. She said that while in the Adirondacks she was taken suddenly on November 27, at 8 p. m. with a pain in the bladder. There was a feeling that "something was trying to get out of the bladder." Soon the worst pain settled in the right lumbar region. She had eaten heartily of chicken salad about two hours before her attack and she vomited freely. On the following day there was great pain in the lumbar region and the same heavy feeling "as if something were going to fall" in the bladder. Her local physician made an examination and found the most tenderness in the right flank about half-way between the kidney and appendix regions. He at once sent the patient to Dr. S. E. Maynard of the Mary Fletcher Hospital, Burlington, Vt. Dr. Maynard's letter is such convincing evidence that the case belongs to the class under consideration that I have gained his permission to publish it in full:

"Miss L. came under my care at the Mary Fletcher Hospital about one week ago suffering with severe pain in the right side. The pain had begun two days before this, starting in the region of the appendix. It gradually followed up the course of the ureter and was most pronounced in the region of the right kidney when I first saw her. The symptoms were those of the passage of a renal calculus. The only thing that troubled me was slight tenderness at the base of the appendix which led me to fear at first a possible postcecal abscess. There was, however, no pain on using the psoas muscle. As the case went on, the kidney trouble became apparent. Three per cent. of albumin was present December 2; there was none on December 1. There were blood, pus, hyaline and granular casts with considerable free blood and pus, a few calcium oxalate crystals, but nothing else of any importance. There was a slight leucocytosis, there being 14,800 on December 3; on this date the albumin was down to 1 per cent., all of the points better. December 4, just a trace of albumin, and December 5 albumin absent and the urine practically clear except for a few granular casts. Leucocytosis was now 13,000. There had been a very slight rise of temperature throughout the entire case. The soreness over the base of the appendix continued, the whole side being slightly tender. My idea was, if she intended to remain here, to make a Roentgenogram and endeavor to determine whether there was any stone in the kidney. I felt that a careful observation, particularly with reference to her general condition and appendix, would be in order. Have written you thus fully about her condition as she desires to return before completely recovered."

Examination.—When I examined the patient the lower pole of the right kidney could just be palpated and it was not tender. There was some tenderness over the cecum in the lateral region just above the ilium. There was more tenderness near the sacral promontory about where the ureter crosses the pelvic brim. Palpation here elicited the "drawn feeling" which the patient said was the only remnant of her attack. A voided specimen of urine taken at the time of this visit and centrifugalized showed epithelial cells and leucocytes in moderate numbers; no red blood corpuscles and no casts. The urine was acid, specific gravity 1.017; no albumin. The patient had not had a return of her trouble.

CASE 4.—*Patient.*—Mrs. M. W., age 38, came to my cystoscopy clinic at the Johns Hopkins Hospital Dispensary, April 15, 1907.

History.—She complained of frequency of micturition and a throbbing backache. These symptoms had been present at times for several years, but had been especially marked for the previous two weeks. She had been sleeping on her back and right side. If she turned to the left side during sleep she was awakened with a pain in the back which was so severe she could not get out of bed for some moments. About six months previously she had bloody urine for ten days and passed many small clots At this time the urine contained a material looking like "bread crumbs" At times she could hold the urine ten hours, but at other times she had to pass it every few minutes

Examination.—On examination the patient was seen to be well nourished. The heart and lungs were negative. The right kidney was just palpable and slightly tender. The right ureter could not be outlined through the vagina.

Cystoscopic Examination.—The bladder and left ureteral region were normal. The right ureteral orifice was drawn unusually far to the right and presented a round opening in the center of a reddened area. A wax-tipped bougie was passed to the kidney without difficulty. Urine catheterized from the bladder and the specimen from the right kidney both showed blood and epithelial cells, and the specimen from the bladder contained a few leucocytes. The wax-tip returned without scratch marks and a culture specimen taken on agar directly from the kidney was negative.

A week later the urine catheterized from the bladder was normal. A more careful examination of the appendiceal region showed the presence here of an indefinitely outlined tender mass, and on pushing this toward the left the backache of which the patient had complained could be elicited. On her first dispensary visit she told of having been in the hospital several times, and on looking up the account of her various admissions I was surprised that she could have been subjected to the many examinations and to three operations without having had her appendix examined and removed.

Hospital Records.—The patient, on her first visit, which occurred in September, 1901, had been married sixteen years and had eight children and two miscarriages The last miscarriage of a six weeks' fetus occurred at the beginning of her present illness. In October, 1900, the patient had a fall and jammed her elbow into her right side. Soon severe pain set in and nine days later she miscarried. During the intervening year she had had repeated attacks of pain in the lower right quadrant, accompanied by backache. On palpation there was deep resistance and an indefinite mass cylindrical in shape in the appendix region. The patient was of a nervous temperament and gave an unsatisfactory history, and it was concluded that her pelvic condition was at fault. A cervical amputation and a repair of the outlet was done. During convalescence the patient complained of a great deal of pain in the right flank and in the femoral and thigh regions. Phlebitis was suspected but no swelling of the leg took place. The temperature did not become normal until the fourteenth day, having ranged from 99 to 100.8 F.

Second Hospital Admission: Sept. 9, 1902.—The patient complained of a dull pain in the right side and burning in the lower abdomen. The following note was made: "Ever since the patient left the hospital one year ago she has had sharp sticking pain in the right iliac fossa. This is quite constant and there have been frequent exacerbations of a more marked degree. She also complains of backache on the slightest exertion. At times she feels well enough to do a little housework, and again she is so weak that she stays in bed most of the day." Operation: Suspension of the uterus and freeing of adhesions about the right tube and ovary. No mention was made of examination of the appendix.

Third Admission: Jan. 20, 1903.—The patient entered the hospital about 11 o'clock at night, doubled over with pain, and on going to bed her knees were drawn up. The tongue was coated, pulse 88, and temperature slightly above normal. Leucocyte count, 8,700. The whole abdomen was very sensitive and there was a slight degree of muscle spasm. The patient stated that this attack had begun with a sudden severe pain one week previously, while reaching up to light a gas jet. The diagnosis was recorded as indigestion and hysteria.

Fourth Admission: Sept. 10, 1903.—The patient entered the hospital in a dull and apathetic condition, complaining of pain in the lower abdomen. Her pulse was 120, temperature 100.5 F., leucocytes 7,300. The attack began five weeks before, compelling the patient to go to bed. She stated that since her previous admission she had had several attacks of pain, nausea and constipation. Two days after admission the patient was examined under ether with negative result.

Fifth Admission: March 27, 1905.—She complained of pain in the abdomen and bleeding. Four weeks before, during what seemed to be a normal menstrual period, the patient was taken with severe pain across the lower abdomen and back. The pain was constant and severe for four days, then the flow became more profuse and continued so. The patient had also suffered from frequent and burning micturition. On examination she complained of extreme tenderness in the lower abdomen. She was examined under ether and nothing could be found to account for the bleeding. The uterus was dilated and curetted, the endometrium showing a normal microscopic picture. She was kept in the hospital for five days and discharged as well. The urine showed an abundance of red and white blood corpuscles, but there was no note to indicate whether this was a catheterized specimen.

These four cases are valuable in that they represent a group picture of a condition with which I am certain the profession at large is not familiar. From the fact that four cases should come under observation within three years, I feel that the condition can not be extremely rare. Three years ago when I reported the first case in this series Dr. Edward Ochsner told me that he and his brother had seen two similar cases in their Chicago clinic. On Dec. 19, 1907, I was called to see a patient with Dr. G. G. Rusk. Her symptoms were such as to make us think of the possibility of stone in the right ureter, and a catheterized, centrifugalized specimen of urine showed an occasional red blood corpuscle. I passed a wax-tipped bougie which returned negative and then removed a distinctly diseased appendix which contained three fecal concretions. Her case was not included in this group because the urinary findings were not marked.

Strictly speaking, Case 4 of the above series does not belong in a report on pyelitis, but I have included the report because the urine had enough blood to be "smoky" and contained a few leucocytes, and because of the many times the real diagnosis in her case had been overlooked.

Can we from these cases draw a clinical picture which will be an aid in future diagnoses? I saw none of these patients in the acute attack, but from the histories and the later findings as above reported, at least two features, other than the abnormal urine, suggest themselves as being more or less constant in this class of cases. These are bladder disturbance and the early cessation of the microscopic signs of urinary tract disease.

In Case 1 some of the attacks were accompanied by a pain in the bladder, but a marked feature was the beginning of each attack with a throbbing in the rectum, a not uncommon symptom in ureteral stone. I saw the patient ten days after her last attack and a catheterized specimen of urine was absolutely normal.

In Case 2 the attack of lumbar pain was preceded by frequency of micturition lasting eight hours. The patient had all of the features of a severe pyelitis with her first attack in Berlin five weeks previously, and during her attack on shipboard, about a week before I saw her, the symptoms were similar, but the urine was not examined. The catheterized urine when I saw her after the journey from New York contained blood and many epithelial and granular casts, but after twenty-four hours of rest these pathologic elements had all disappeared.

In Case 3 the patient was taken suddenly with a severe bladder pain and "a feeling that something was trying to get out of the bladder," and during her attack Dr. Maynard found every evidence of a pyelitis. One week later when I saw her a voided specimen, centrifugalized and examined immediately, showed only a few leucocytes and epithelial cells, all of which may have been from the lower tract.

In Case 4 the patient had had bladder symptoms at times for four years, and these were more pronounced when the pain in the lower right side was increased. On her first dispensary visit the urine was "smoky" from its blood content and there were a few leucocytes; one week later it was normal.

The pathology of this condition is perhaps best suggested by the findings in Case 1. The appendix was densely adherent over the pelvic ureter. Inflammation of the appendix under such conditions would naturally lead to pressure on the ureter and inflammation and swelling of its walls. The stenosis thus established would result in acute hydronephrosis, a most favorable condition for infection either by contiguity, through the lymphatics, or by way of the blood stream and the kidney excretion. In Case 2 the operation did not reveal such close relationship between the appendix and the ureter, but the appendix lay over in the pelvis and the tube had become adherent to the ureter, pregnancy probably resulting from this adherent condition. The most suggestive feature of this case was the obstruction to the renal catheter at about the appendix region and the free hemorrhage from the ureter following the overcoming of this obstruction.

Should appendicitis have been diagnosed in these cases in spite of the urinary findings? Case 1 was watched by careful physicians, one of whom was a brother and the other a cousin. We all recognize the misfortune of being a member of a physician's family, but, as a further reason for error in diagnosis, the evidence in her case was highly misleading, the pain in each attack soon shifting to the kidney region and the urine showing marked pathologic changes. With any obscure attack of right-sided abdominal pain beginning as a throbbing in the rectum we should at least keep a suspicious eye on the appendix.

Not only was appendicitis not suspected in Case 2, but the Berlin specialist wrote Dr. M., the husband, a letter, after hearing of the diagnosis and operation, complimenting him on the outcome but refusing to believe the attack to have been other than pyelitis *per se* and unassociated with appendicitis.

The Adirondacks physician considered the patient in Case 3 to have an acute attack of appendicitis, but one day after she reached the Burlington hospital, and the third day of her attack, the urinary findings were such as to make Dr. Maynard extremely uncertain about the diagnosis.

Case 4 would scarcely be considered other than a chronic appendicitis victim with our present day knowledge of the less typical forms of this disease.

The importance of early recognition of the true nature of these cases is obvious. A pyelitis or kidney condition, in itself, is rarely of immediate danger, while the overlooking of an acute fulminating appendicitis because of dependence on the urinary examination might cost the patient's life.

THE OPERATION FOR THROMBUS OF THE SIGMOID SINUS AND INTERNAL JUGULAR VEIN, OF OTITIC ORIGIN.*

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One of the most important sequelæ of middle-ear infections is phlebitis or thrombosis of some of the venous drains of the head, and particularly when such pathologic conditions occur, as they usually do, in the sigmoid bend of the lateral sinus. Disease of this nature is found not only in the sigmoid sinus, but also in the lateral sinus proper, the superior and inferior petrosal sinuses, the cavernous sinus, the jugular bulb, the internal jugular vein and its connections, etc. The sigmoid sinus is, however, its favorite location on account of its vascular connections with the tympanic cavity and adjoining cells and its close contiguity to these frequently infected structures. As the jugular bulb is located directly beneath the tympanic cavity, an unusually high dome to the bulb, or necrosis of the tympanic floor, or congenital dehiscences in the floor, will assist in the conveyance of infection. This will occur through the vessels and lymphatics connecting the tympanic cavity with the bulb, and may produce a primary phlebitis or thrombosis of the bulb, which has not proceeded through the usual channels of the antrum, mastoid cells and lateral sinus. These conditions are usually found in children, develop rapidly, and generally demand immediate operation with excision of the internal jugular vein.

I do not believe that actual intravascular phlebitis and thrombosis of the sinus and vein occurs as frequently as might be supposed from a perusal of much of the available literature of the day, because a fairly large experience in mastoid work for many years has not disclosed this to be the case. Nevertheless, the disease occurs with sufficient frequency to demand the most careful study in order that prompt and skilful action may be taken whenever its existence is actually disclosed.

RISK IN SINUS OPERATIONS.

The surgery of otitic phlebitis and thrombosis has made great progress of late years and many lives have been saved thereby that must otherwise have been inevitably lost. I fear, however, that overenthusiasm along these lines may have led some thoroughly competent and trustworthy observers to overestimate the frequency and importance of the subject and to underestimate the dangers of operative interference. The opening of the sigmoid sinus, for instance (first seriously proposed by Zaufal in 1880), with its possibilities for infection, especially when done through an already infected mastoid cavity (which is, of course, usually the case), is an operative procedure of importance and danger. Yet some surgeons practically advocate its performance for diagnostic purposes where any reasonable suspicion points to an intrasinus involvement. In my opinion the sinus should usually be opened in the face of mastoid disease, either acute or chronic, accompanied by characteristic phlebitic symptoms, such as chills, sweats and wide excursions of temperature and pulse. It should also be done in the presence of a virulent infection, especially of the streptococcus type, a significant differential blood test, etc. Nevertheless, I have seen a number of such cases cured by the removal of necrosed bone, granulations[1] and pus from the sinus neighborhood. I should, therefore, be inclined to wait a few hours after the removal of such débris, before opening the sinus itself, unless the patient's condition and symptoms are reasonably decisive and urgent in character, and unless an inspection of the exposed sinus renders the presence of a thrombus exceedingly probable.

It must have been the experience of most surgeons that phlebitic symptoms frequently and permanently may be relieved by a removal of neighboring necrosis, granulations, pus, etc., which perpetually infect and reinfect the sinus walls. This fact is especially emphasized by Bergman in his writings and can certainly be substantiated by all operators of experience. In this observation lies an earnest warning against too energetic operative procedures, without quite positive indications. It is sometimes the case that septic symptoms following a mastoid operation are due to pneumonia, typhoid, malaria and other coincident conditions which should be duly considered and properly weighed before proceeding to a sinus operation. It should not be forgotten that, while lives may occasionally be sacrificed by proper conservatism, it is probable that more lives would be lost by injudicious and hasty surgery.

The provisional determination to open the sigmoid sinus is usually formed before the mastoid has been operated on, or after an operation has been performed and several days have perhaps elapsed, during which time the condition of the patient has not materially improved. This resolution is, of course, liable to be changed by existing intramastoid conditions, after the mastoid cortex has been removed, at the time of the primary operation. In all cases where sinus symptoms are clearly present, the bony covering should be freely and carefully removed and the soft sinus exposed for inspection, whether the osseous partition is necrosed or not. Should the inspection reveal an apparently healthy sinus, operative procedures may be suspended (unless the patient's condition is too grave), as sharp sinus symptoms are sometimes produced by a beginning absorption or phlebitis. This may originate in an infected mastoid cavity, relief from which is not infrequently noticed after a thorough exposure and cleaning of this space.

After this has been accomplished and the patient carefully watched for some hours or perhaps one, two or three days, and the sinus symptoms remain the same or grow worse, the sinus should be unhesitatingly opened, even if its local appearances are apparently healthy. Much the same procedures should obtain in case necrosis, granulations and pus are found in the sinus region, for such pathologic products continually bathing the soft tissue tend to become absorbed and to produce the characteristic danger signals. Such débris may be carefully removed and the sinus amply inspected. Should it be found of healthy appearance, one may stay operative procedures a little, unless the symptoms are quite urgent. Many patients have recovered and will recover under such conservative management, and this fact points a significant lesson.

THE APPEARANCE OF THE UNCOVERED SINUS.

Of course, the entire subject of opening the sinus hinges on the probable existence or non-existence of a

* Read before the Middle Section of the American Laryngological, Rhinological and Otological Society, Indianapolis, Feb. 22, 1908.

1. The existence of granulations on the soft sinus wall is regarded by many as beneficial, in that it is nature's obstruction to the invasion of micro-organisms, and many surgeons carefully refrain from disturbing them during the course of an operation.

thrombus, and this can not always be easily determined. A discussion of this topic is too prolonged for the present article, and is apart from the specific subject under consideration.[2] As the physical appearance of the uncovered sinus, however, must be observed while operating on a patient suffering with sinus symptoms, this phase of the subject may with propriety be here considered, and it may be said that even a physical examination of the sinus does not always clear up the pathology. The sinus is usually bluish-white in color and easily compressible. Nevertheless, the neighboring necrotic bone, etc., may stain and darken the outer coats of the vessel, without the existence of any intramural clot, or a perfectly normal color may characterize a sinus, in whose interior a thrombus may be found.

A sinus may be thoroughly compressible and yet contain a parietal clot, where the obstruction is not yet complete, but a solid, resisting sinus is, of course, a reasonably positive sign of an obstructive clot. The emission of pus from the mastoid foramen is a significant symptom, as it may then be assumed that extradural pus is present in the cerebellar fossa, around the sigmoid groove. I am opposed to the insertion of an aspirating needle into the sinus in order to ascertain the fluidity of its contents. If nothing is withdrawn it is safe to assume the presence of a thrombus, but blood may escape in case of a partially organized clot, and if the vessel is healthy the operator may easily regret having punctured and probably infected a normal sinus; if the sinus is to be opened at all, it is much better to make a complete incision rather than a puncture. The stroking and compression test of Whiting can not be commended, for, while it may facilitate the diagnosis, it can easily displace infected thrombotic particles and set them into circulation with disastrous results.

THE PROBLEM OF DIAGNOSIS.

It will thus be seen that making a diagnosis in cases of otitic sinus thrombosis is beset with some difficulties and perplexities. Yet a correct conclusion can usually be reached, especially when a consideration of the general subjective and objective symptoms has been aided by an operative exposure of the sinus itself through the mastoid cavity. Fortunately this (the mastoid operation) is a procedure which should be performed primarily and, therefore, nothing is lost and everything gained when a mastoid operation is advised in a suspected otitic sinus thrombosis, for the cells, etc., may be thoroughly opened and cleaned and the sinus inspected and perhaps opened during one operative procedure.

Should an operation, or at least an inspection of the sigmoid sinus be decided on, in a case of otitic origin, it is only necessary to consider the operative steps in connection with a thorough exposure of the mastoid cavity, for this is at the same time the easiest as well as the best avenue of approach. The mastoid operation should first be completed in all its details, for, in case troublesome hemorrhage occurs, it might be extremely difficult to continue further operative procedures on the bone. In addition, the work on the sinus should be prosecuted under the most aseptic conditions possible, and this can be best accomplished after the mastoid interior has been thoroughly cleaned. As has been previously said, the bony covering of the sinus may be in a necrotic, softened and fistulous condition, surrounded by granulations and bathed with pus.

THE REMOVAL OF GRANULATIONS.

The removal of such pathologic products can be accomplished with comparative ease by curette, chisel, bur or rongeur, extreme care being exercised in all such manipulations to avoid injuring the soft dural covering of the vessel. Some authors advocate the non-removal of granulations, believing them to be Nature's obstruction to the invasion of the sinus interior by microorganisms. However this may be in theory, I believe that such tissue is best thoroughly removed, not only to place the parts in as clean a condition as possible, but also to facilitate a careful examination of the sinus, which can not be satisfactorily accomplished through a granular mass. In most instances I accomplish this work by means of a strong, narrow rongeur, one blade of which is inserted inside and the other outside of the bony sulcus, being careful to avoid pressure on the underlying vessel and only removing small fragments of bone at a time. Objections have been made that the slight pressure on the sinus may induce a fracture of its possibly thrombotic contents, which will be swept into the circulation and induce migratory infection. This objection seems like a refinement of technic and a magnifying of possibilities, for, while such an accident might possibly occur, it is altogether unlikely. It certainly would seem to be a better instrument than the chisel, with its possibilities of bone fracturing and splintering, with perhaps a sinus puncture and an embarrassing hemorrhage.

All the necrosed bone should be removed, no matter how far it extends, either in the direction of the torcular or the bulb, and it is well to remove even some healthy bone in order to insure complete elimination of all necrosis (Fig. 1). The sinus should then be minutely inspected, and if its opening is determined on the operation should be continued after the parts have been thoroughly cleaned and irrigated with antiseptic solution. If it is deemed best to await developments the wound should be cleaned, irrigated and dressed as after other mastoid operations.

In case a primary opening of the sinus is determined on either at the original mastoid operation or at a later date, it should be remembered that an ample exposure is absolutely essential to correct surgical manipulations. The sinus must be exposed, therefore, for at least a short distance above its knee and as far downward in the direction of the jugular bulb as possible. This free exposure may be accomplished by a removal of the necrosed bone alone, where such necrosis is extensive in character, or it may be necessary to remove considerable healthy bone in order to render the sinus easily accessible.

LOCATION OF THE SINUS.

Unless the situation of the sinus is indicated by a fistula, its position is uncertain. In children it is located more superficially and further forward than in adults, and even in the latter its location is by no means fixed. It is usually, however, to be found at a point about one-half an inch behind the posterior bony meatal wall, just back of the antrum, and a thorough mastoid operation will usually disclose its convexed outlines. The sinus should first be exposed by chisel, bur or curette, after which the bone is best removed with a strong, delicate and narrow rongeur, as previously described. The bone should be carefully removed in small pieces

2. A tolerably complete analysis of the symptomatology of sinus thrombosis, etc., can be found in my communication in the Chicago Medical Recorder, January, 1906, and in other books and periodicals.

and the operative field examined after each bite of the forceps, care being taken not to wound the sinus, either by perforating its covering by a sharp fragment of bone or by rupturing an already softened dura by carelessly pulling away adherent osseous chips. The latter accident may be averted by, from time to time, passing a small spatula between the soft sinus and its bony covering and gently separating the two.

After the sinus has been fully uncovered all débris, etc., should be thoroughly removed and the operative field abundantly flushed with antiseptic. The hands and instruments of the operator should be recleaned and every effort made to prevent sinus infection. In opening the sinus there is danger of a fatal aspiration of air occurring, to prevent which the patient's head should be dropped low and the operative area flooded with sterile water. The sinus should now be opened by a free incision along its length, being careful not to pass through both walls of the sinus into the cranial cavity, an accident which is by no means impossible. If there is a flow of blood, two tight rolls of gauze or cotton held in fixation forceps (which should be previously prepared) should be placed one above and the other below the incision, remembering that brain substance and not

Fig. 1.—Exposing the sinus. A, mastoid antrum; B, sigmoid sinus; C, mastoid emissary vein.

bone lies beneath the sinus, and that the amount of pressure should, therefore, be limited (Fig. 2). Such pads may be held by the operator, or by his assistant, or both operator and his assistant may each hold one; they should not be applied, however, until after the sinus has been opened and an opportunity has been given for a burst of hemorrhage to occur and possible thrombotic particles to become expelled. These pads may be lifted alternately and accurate information obtained as to whether the hemorrhage occurs from above or below.

If free hemorrhage occurs from both directions it is proper to assume the absence of a clot, or at least that any existing loose clots have been expelled by the force of the escaping blood. If the hemorrhage is slight or absent from either direction, a clot in that direction is to be assumed. If the vessel is assumed to be healthy, some iodoform gauze, rolled into a cylinder long enough to cover completely the sinus incision, should be firmly placed over the vessel and supplemented by layer after layer of gauze carefully held in place. The other portions of the mastoid cavity should then be packed with gauze and the entire mass of packing held in position by a firmly applied bandage which may usually remain in position for three, four or five days, when it should be carefully soaked off (to prevent hemorrhage) and more packing and a bandage applied.

The danger of hemorrhage is usually past by the time the second or third dressing is done. In case there is hemorrhage from below and not from above, the sinus should be further incised in the direction of the torcular, and more of the bony sulcus removed if necessary, in order that adequate room for further operative procedures should be afforded. In considering thrombi, which extend from the sigmoid sinus back toward the torcular, it should not be forgotten that clots extending in that

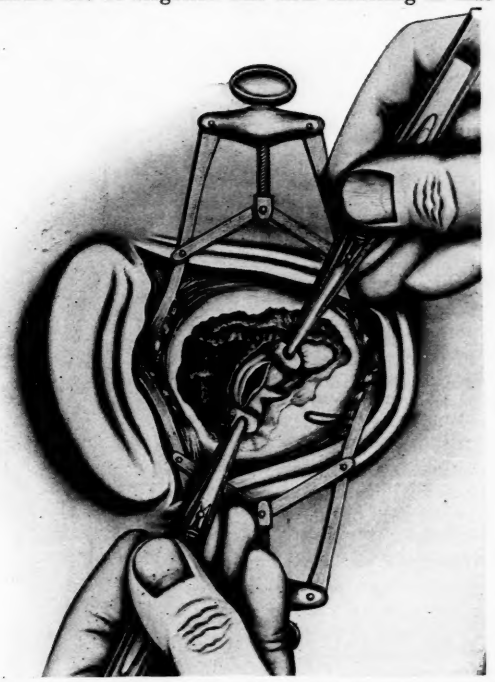

Fig. 2.—Compression of the sinus to arrest hemorrhage, and to ascertain the presence of a thrombus.

direction are not usually so infective in character as those spreading in the direction of the bulb. The venous current, of course, naturally flows from the head downward, and, while infectious particles may easily pass down with the blood current, they do not so easily pass upward and backward against the current. It should not be forgotten, however, that blood currents in valveless veins seek the direction of least resistance and may easily become reversed on contact with intravenous obstructions. It is, therefore, quite possible that, while a thrombus in the immediate vicinity of the antrum may be highly infectious in character, yet as it extends backward toward the torcular it may gradually become perfectly innocent, and be composed of benign accretions of normal blood clots that form a natural and healthy obstruction to the passage of infectious micro-organisms.

TREATMENT OF THE THROMBUS.

It is, therefore, questionable just how much such a thrombus should be disturbed, and some authors strongly advocate leaving it alone. I believe that if the clot is hard and apparently extensive, it should be gently curetted at its visible portion, in order to remove its infectious layers, and then sprinkled and packed with iodoform powder and gauze. In case, however, the clot is

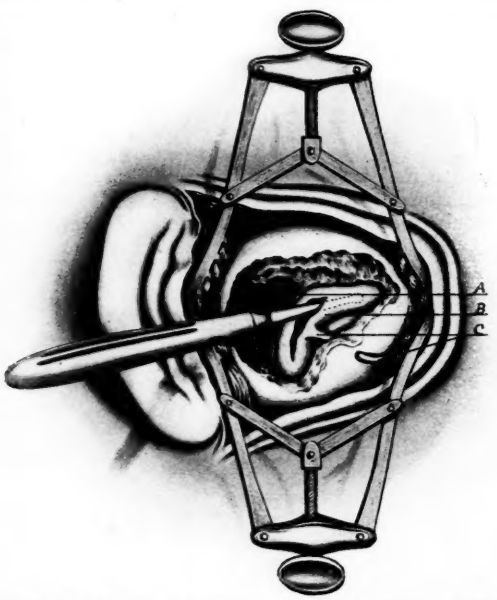

Fig. 3.—Curetting the sinus. A, mastoid antrum; B, sigmoid sinus; C, mastoid emissary vein.

small, or soft and unhealthy in its appearance, it should be completely removed by the curette until free hemorrhage occurs (it being remembered that quite free hemorrhage may occur, even with a considerable parietal thrombus, from, for instance, the superior petrosal sinus, though the sigmoid sinus is more or less blocked

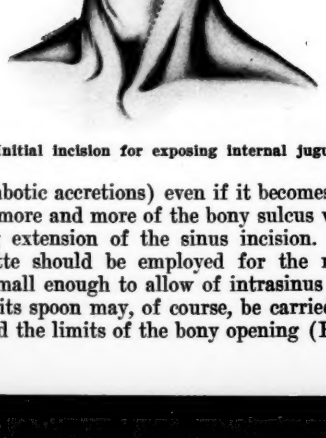

Fig. 4.—Initial incision for exposing internal jugular vein.

with thrombotic accretions) even if it becomes necessary to remove more and more of the bony sulcus with a corresponding extension of the sinus incision. A small-sized curette should be employed for the removal of thrombi, small enough to allow of intrasinus manipulations, and its spoon may, of course, be carried considerably beyond the limits of the bony opening (Fig. 3).

It should not be forgotten that a sinus infection of several days' duration may soften the sinus walls to such an extent as to render their perforation by a curette exceedingly easy; curetting should, therefore, be carefully performed, lest brain infection be thus produced. Ease of manipulation may be much facilitated in all sinus curettements by not only incising the sinus, but by excising a large piece of its outer dural wall, and diagnosis and surgical precision will be greatly aided by exposing the intrasinus openings of the mastoid emissary vein and the superior petrosal sinus. The former will be found in the posterior wall of the sinus at a point about on a level with the floor of the ordinary radical mastoid operation when finished. The latter enters the sigmoid sinus from the cavernous sinus at a point about on a level with the roof and posterior wall of the ordinary radical mastoid operation, when completed; in other words, at about the junction of the

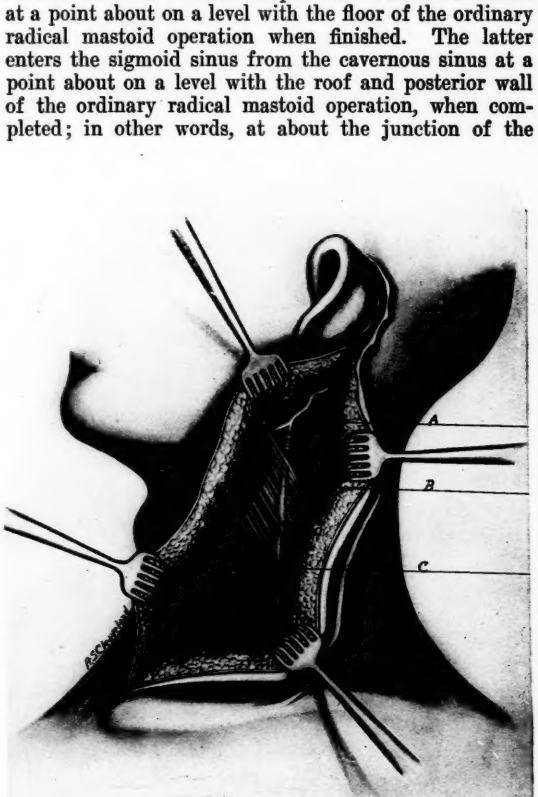

Fig. 5.—Exposure of platysma myoides muscle and external jugular vein. A, sternocleidomastoid muscle; B, external jugular vein; C, platysma myoides muscle.

It will be observed in Figures 4, 5, 7 and 9 that the incision in the neck is continuous with the incision over the mastoid process. This point has been brought out in the pictures because in neck surgery where the internal jugular vein is to be removed, owing to a previous mastoid infection, the incision in the neck should be secondary to and continuous with the incision over the mastoid process.

lateral with the sigmoid sinus, and passes into the sigmoid sinus.

In endeavoring to get as close to the jugular bulb as possible the surgeon should not press too far forward, as he is liable to injure the facial nerve, as it passes down through the posterior meatal wall on its way to the stylomastoid foramen. Bleeding may easily be stopped by carefully applied gauze rolls. In case free hemorrhage does not proceed from the bulbar direction of the sinus, a very serious condition confronts the operator, for, the blood current of the inferior petrosal sinus entering the anterior portion of the jugular bulb,

on its way from the cavernous sinus, constantly playing on the septic end of the thrombus, naturally carries the infectious micro-organisms down into the bulb, internal jugular vein, etc., toward the heart, lungs, liver, etc., thus readily producing sepsis, pyemia, metastatic abscess, etc., which usually result fatally.

It is, therefore, necessary that this end of a thrombus, or a thrombus located in this portion of the sinus, should be as thoroughly removed as possible, in order that the further or general spread of infection may be stopped. This may probably be best accomplished by the curette, which should be gently manipulated until free hemorrhage from below occurs, which may be controlled by the rolls of gauze, bandage, etc., as previously described. It must not be forgotten, however, that it is usually quite impossible to successfully curette the jugular bulb by simply proceeding downward by way of the sinus. The curette can reach practically as far as the bulb and is then stopped by an intervening wall, an abrupt curve, etc., so that if a complete thrombus extends downward as far as the bulb or further, free hemorrhage will not usually be produced by sinus curettement.

Under these circumstances the operation of Grunert, Voss, Iwanoff and others has been proposed for the thorough exposure of the bulb. Owing to the complications and great danger of producing facial paralysis, hazardous hemorrhage, etc., however, it has never become popular and it is generally thought better to expose, ligate and partially remove the internal jugular vein and then clean out the bulb. It must not be forgotten that this does not always prevent the spread of infection by other channels, and that the sudden stoppage of the venous circulation may force infective particles backward into the meningeal and cerebral veins. While the internal jugular vein is, of course, the main avenue through which infection spreads from the sigmoid sinus to the heart and other organs, nevertheless, even with this principal channel ligated, infection may proceed through the posterior condylar vein, the occipital sinus and the mastoid emissary vein, all of which communicate indirectly with the subclavian and innominate veins, irrespective of the internal jugular. It will be remembered that the posterior condylar vein passes through the posterior condylar foramen and connects the lowest level of the sigmoid sinus with the deep veins at the back of the neck.

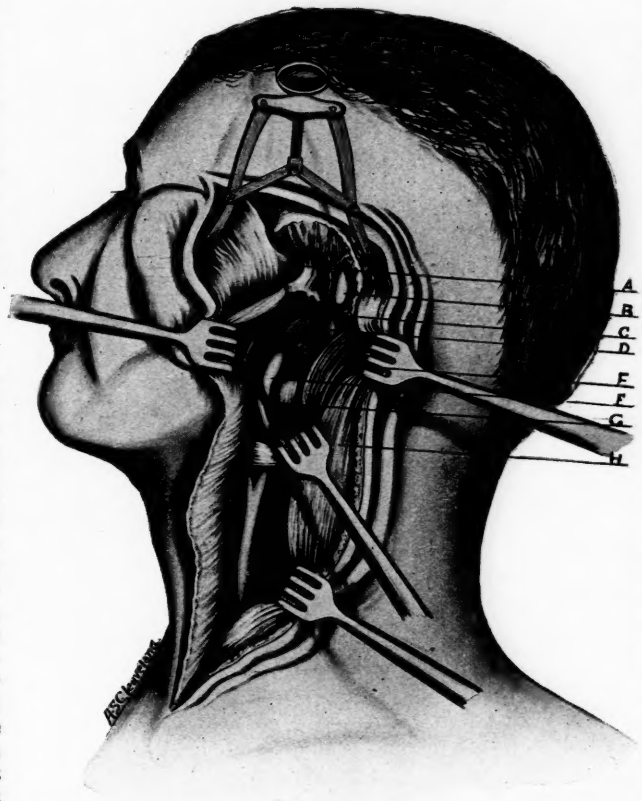

Fig. 6.—Showing the course of the sigmoid sinus, jugular bulb and internal jugular vein. A, external auditory meatus; B, sigmoid sinus; C, facial nerve; D, jugular bulb; E, digastric muscle; F, internal jugular vein; G, spinal accessory nerve; H, sternocleidomastoid muscle.

LIGATION OF THE INTERNAL JUGULAR.

Some surgeons invariably operate on the internal jugular before proceeding to open the sinus; others only ligate when free bleeding can not be established from the bulbar end of the sinus; others open and curette the sinus and then wait for a continuance or exaggeration of the symptoms, when the jugular operation is performed. Certainly but few, if any, surgeons would sympathize with the views of Horsley, who only ligates after metastases have occurred, for then it would almost surely be too late. Favorable reports of jugular ligation in sinus thrombosis need not necessarily be attributed to the ligation, as, for instance, Körner reports 43 per cent. of recoveries without ligation. Still, it is probably true that in septic and pyemic cases sinus operations with jugular excision yield better results than when the jugular is not disturbed.

My method of procedure is as follows: The sinus is opened, the head always having been previously lowered, the upper portion is curetted if necessary. If hemorrhage occurs freely from below the operation is finished; if not, the lower end of the sinus is carefully curetted and if free hemorrhage occurs nothing further is done. If free hemorrhage does not occur, pressure pads and a bandage are quickly applied and the jugular is ligated and excised, the bandage then removed, the sinus, bulb, etc., curetted and cleansed and the entire operative field, both in the bone and neck properly dressed and bandaged. The necessity for the operation is greatly emphasized if the cervical tissues just below the mastoid are swollen and painful, and if any hardness and pain can be detected along the course of the vein in the neck, and if general pyemic symptoms are present.

I am convinced that excision of the jugular is not an operation which should be undertaken hastily, as grave circulatory and other disturbances are liable to ensue, and other methods of relief should first be tried, unless the patient's condition is very urgent. The literature furnishes many instances where sudden optic neuritis, edema of the brain, with hemorrhages

and softening, thrombosis of other cerebral sinuses, etc., have followed jugular ligation, and it should not be forgotten that a small and insufficient jugular on the other side, totally unable to assume double duty, may be present and precipitate most unfortunate results. As a deduction from these observations Eagleton urges that in cases of sinus thrombosis, with optic neuritis, it should be concluded that the return venous flow is already seriously obstructed and that great caution should be observed in adding to such conditions by ligation.

EXCISION RATHER THAN LIGATION.

In case it is concluded to operate on the jugular vein it is better to excise most of it rather than merely to apply a ligature, as, if the jugular operation is necessary at all its septic or pyemic current should be eliminated as much as possible and its poisonous contents removed. Before operating on the jugular the shoulders should be elevated on a sandbag or something of the kind and the neck and head allowed to drop down, the latter turned away from the field of operation in order to place the neck well on a stretch, so that the anatomy of the parts is well defined and the tissues easier to operate on.

If the patient is a male the beard should be shaved and the skin antiseptically cleaned, care being taken not to disturb and break up a possible clot by rough handling. In the case of a male where it is at all suspected that a jugular operation will have to be performed the beard should be shaved before the mastoid operation is commenced. The neck should now be placed on a stretch and the anterior border of the sternocleidomastoid muscle clearly located and an incision (Fig. 4) made along its edge extending from its sternal attachment to the mastoid tip.[3] Bleeding vessels should, of course, be compressed at all stages of the operation so that a clear view of the operative field may always be obtained. The skin and other tissues should be kept stretched apart by blunt retractors. After the skin and superficial fascia have been completely severed the platysma myoides muscle with its oblique fibers can be plainly seen and should be fully exposed and incised along the anterior border of the sternocleidomastoid muscle, which can now be distinctly seen, and which should be fully uncovered by holding back the overlying tissues by retractors (Fig. 5).

The external jugular vein runs down the neck in a line drawn from the angle of the lower maxilla to about the middle of the clavicle and lies between the platysma and the sternocleidomastoid muscle. It crosses the latter muscle at an oblique angle, but does not cross the anterior border of the muscle except at its upper third at the angle of the jaw, where it may be seen, twice ligated, cut between the ligatures and gently retracted from the operative field. If ligation of the internal jugular were the only object to be attained it would not be necessary to touch the external jugular, for the ligature would be applied much lower down, near the cricoid cartilage, but as the intention usually is to excise practically the entire vein, it may be advisable to get the external jugular out of the way. It should be preserved if possible, however, as it performs an important part in caring for the venous blood after the internal jugular is removed.

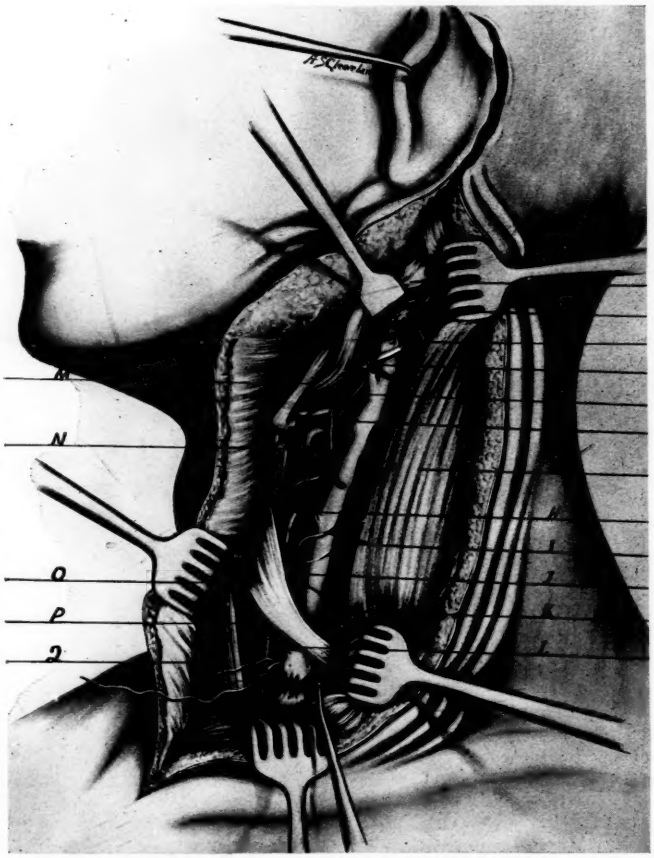

Fig. 7.—Exposure of the internal jugular vein, etc.; the vein is about ready for removal. A, posterior belly of digastric muscle; B, spinal accessory nerve; C, occipital artery; D, facial vein; E, hypoglossal nerve; F, lingual vein; G, sternocleidomastoid muscle; H, superiorthyroid vein; I, communicantes hypoglossi nerves; J, common carotid artery; K, phrenic nerve; L, middle thyroid vein; M, stylohyoid muscle; N, descendens hypoglossi nerve; O, anterior belly of omohyoid muscle; P, sternothyroid muscle; Q, sternohyoid muscle.

Retractors should now be placed around the anterior border of the sternocleidomastoid muscle, and the muscle pulled back in order to expose to view the carotid, jugular, etc. This object may be facilitated by tearing and pulling the tissues apart by blunt instruments or the fingers, as care should be exercised that vessels and nerves are, as far as possible, uninjured, a thing difficult to prevent if knives and scissors are employed. The exposure should be made throughout the entire length of the sternocleido muscle from its mastoid to its sternal attachments, for it will be the object of the operation to remove practically all of the vein, and it should, therefore, be completely exposed (Fig. 6).

The deep fascia of the neck will be seen on retracting

3. Crile and others sometimes cut down on the sternocleidomastoid muscle and expose the vein, by separating the muscular fibers.

the sternocleido muscle, and on opening this and throwing it back the common sheath of the jugular, carotid and pneumogastric nerve may be seen. The utmost care should, of course, be taken to avoid wounding these structures, and as far as possible all sharp instruments should be eschewed in performing the delicate dissection. The internal jugular vein, the common carotid artery and the pneumogastric nerve are all encased in a common sheath. At the superior carotid triangle (the usual center of operative procedures) or at a point about midway between the angle of the jaw and the clavicle, the vein lies to the outer side of the artery, with the nerve between and posterior to both (Fig. 8), resembling, as Deaver says, the ramrod to an old-fashioned double-barreled shotgun.

ANATOMIC RELATIONS.

It should be remembered that while the relative location of these different anatomic constituents differs slightly in various portions of the neck, the vein always lies to the outside of the group and can be distinguished by its bluish-white color, by the fact that it becomes full and prominent on expiration and almost collapsed on inspiration or by pressing on it in the lower portion of the neck, when it will expand with blood (unless thrombosed) and quickly disclose its identity. The common sheath of the vein, artery and nerve should now be

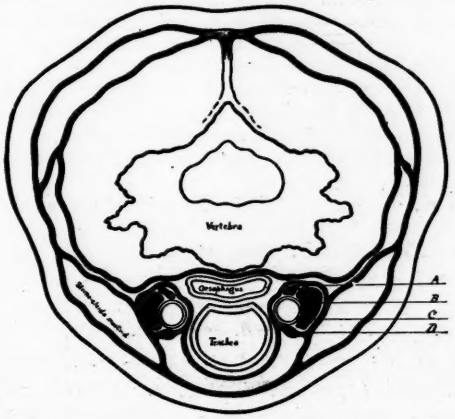

Fig. 8.—Cross section of the neck (after Deaver). A, pneumogastric nerve; B, internal jugular vein; C, common carotid artery; D, descendens hypoglossi nerve.

opened and also the septum which separates the vein from the artery and nerve, and the vein carefully dissected out, practically throughout its entire extent. The artery is, of course, easy to identify, both from its color and its pulsations, but the nerve may, unless considerable care is taken, easily be raised and ligated with the vein.

All enlarged and diseased glands should be removed. After the vein has been thoroughly liberated from its surroundings, the lower ligature should be placed as far down in the neck as possible, and the upper one high up, as close to the mastoid process as possible, using either ten-day chromicized catgut, black silk or Pagenstecher linen, preferably the first, as there is practically no danger nowadays in the use of catgut prepared by modern methods. Two ligatures are applied at each extremity by means of an aneurysm needle and the vein cut between each pair of ligatures, being careful to include nothing but the vein in the ligatures.

In order to check the breaking off and floating of small thrombotic particles toward the heart, etc., which may easily occur from the necessary surgical manipulations of the operation, the lowest ligature should be placed around the internal jugular vein as early as possible and as soon as a low exposure can be made, after which the regular steps of the operation may be proceeded with. This lowest ligature can usually be best applied at a point just below the angle of the omohyoid muscle. The tributary veins should be ligated, and they may be enumerated from below upward as follows (Fig. 7):

The middle thyroid in the lower third of the neck (Fig. 7, L); the superior thyroid (Fig. 7, H), a little higher up; the lingual (Fig. 7, F), a little below the lower jaw; and, lastly, the common branch of the temporal and facial (Fig. 7, D) veins. Sometimes these veins are so small as not to require ligating, with the exception of the common branch of the temporal and facial veins, which always requires careful attention. In removing the internal jugular it should always be

Fig. 9.—Closure of the wound showing scheme of drainage.

severed above the posterior belly of the digastric muscle (Fig. 7, A) and above the common trunk of the facial and temporal veins, but the ligation need not extend more than half or three-quarters of an inch higher than this junction, as no more cervical veins enter the jugular above this point.

All of the veins which may require ligation enter the internal jugular (practically) in its anterior portion which if borne in mind will simplify their finding. After all connections are severed the vein may be removed and the parts thoroughly irrigated and cleaned preparatory to closing the wound, remembering that the operation should be performed with all the speed that is compatible with correctness and safety, as such patients should not be kept under anesthesia any longer than is necessary. Sometimes inflammatory adhesions will so firmly unite the vein to its surroundings that its release will necessitate the expenditure of too much time, to say nothing of the danger of rupturing the carotid artery. Under these circumstances the vein and its trib-

utaries should be split open, cleaned, and the neck wound dressed without permanent sutures.

It is not advisable to undertake to irrigate the sinus and what is left of the jugular, either from below upward or the reverse, as infection can easily pass into the inferior petrosal sinus. It sometimes happens that even after the jugular has been resected the upper ligature removed, and the sinus thrombus removed by curettement, there is no return flow of blood from the bulb, which indicates a thrombus of the inferior petrosal sinus. This is an infrequent complication, as is also a similar condition of the superior petrosal sinus, and should be met by following up the sinus and curetting it. The sinus should be cleaned of all possible thrombotic material by the curette after the jugular ligation, but forced flushing should not be attempted.

It is a good plan after the jugular has been resected to remove the upper jugular ligature and give the inferior petrosal sinus an opportunity to send its blood down through the opened jugular vein, in hopes of flushing away thrombotic débris that might be present. The vein should then be resutured, or, as suggested by A. Knapp, "on the day following the operation thrombosis having occurred in the jugular vein, below the bulb, this vein should be slit up, so that we have access to the bulb from both directions, thus preventing a purulent disintegration of the thrombi in the contributory veins and sinuses." Knapp recommends this procedure, especially in the severest cases.

TREATMENT OF WOUND.

The wound should now be drawn together except at its upper and lower extremities, which should be left open for drainage. The lower opening need only be very small, just large enough to admit of a round rubber or cigarette drain, which should extend inside the wound for perhaps two or three inches, and which should be gradually shortened from day to day until it is withdrawn altogether (Fig. 9). The opening in the upper portion of the wound should be larger and should be either packed with iodoform gauze or drained with a round rubber or cigarette drain to be likewise gradually removed until compact healing occurs. Many surgeons do not suture this large neck wound, but draw the parts together with adhesive strips, feeling that the patient should be given every chance for his life by an open wound and free drainage. This, of course, involves an enormous scar but, nevertheless, is justified in bad cases, and possibly always. The jugular operation having been completed, the surgeon should now return to the sinus, on which work had been temporarily suspended.

The compress should be removed from the bulbar end of the sinus and all possible clot removed by means of a curette, after which narrow iodoform gauze should be gently but firmly packed into the interior of the sinus as far as possible. Pressure should, of course, be retained on the torcular end of the sinus and the entire mastoid wound dressed as usual, endeavoring as much as possible to separate the sinus from the mastoid packings. The neck should be abundantly dressed with gauze and cotton and the mastoid, head and neck enveloped in a voluminous and firm bandage, which it is best not to disturb for at least three days. Ordinary dressings at intervals of two or three days should follow until complete hearing occurs.

TREATMENT OF SHOCK.

Should symptoms of shock occur during the steps of the sinus or jugular operation relief may be obtained by injections of physiologic salt solution into a vein, the breast or abdominal tissues or the bowels. If an intravenous injection is made, from sixteen to eighteen ounces of the solution should be used at a temperature of about 106 F. If the injection is made into the tissues or bowels from one to two pints should be used at a temperature of about 112 F. At all sinus and jugular operations appliances for making these injections should always be ready for instant use. In case the patient is in a very grave condition it is a wise precaution to give an intravenous infusion of physiologic salt solution before beginning operative procedures. Such infusions are also valuable in cases of general infection to counteract and combat the potentiality of migrating microorganisms.

72 Madison Street.

TREATMENT OF CHRONIC TRACHOMA.*

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The original scope of this paper did not include the surgical treatment, but it has been suggested that mention be made of treatment of entropion, and such surgical measures as may be used or endorsed. This makes a broad subject—too broad to be encompassed in a short paper—and for this reason I will confine myself to what seems to me of especial merit. This will leave the subject open for discussion by those who may favor Roentgen-ray treatment, electrolysis, or other lines which may be intentionally omitted, and the omission is not made with the purpose of ignoring other methods, but because of an insufficient amount of actual experience to enable me to express a judgment which may be deemed of value.

It will be presupposed, for the sake of argument, that the disease is contagious, and if so, due to a germ. This is based on personal observation relative to the contagiousness of the disease.

GERMICIDES.

The principal considerations are: First, select a germicide which is effective; second, prepare the infected surface in such a manner that the germicide may act; third, combat corneal complications (pannus and ulcers); fourth, correct the condition of the lids, which may cause relapsing inflammation (entropion, cysts, etc.).

The remedies used are copper sulphate, mercuric oxid, tannic acid, silver nitrate, boric acid, jequirity. In the empyrical use of drugs to combat chronic trachoma, perhaps no remedies have been so extensively used as copper sulphate and silver nitrate, the former in the absence and the latter in the presence of secretion. Of these, copper sulphate deserves special attention. It may seem almost presumptuous to more than mention a remedy, the use of which is so familiar to all. My excuse for so doing is based on the following incident. A former patient came to my office and related his experience, which set me to thinking. In former years I had repeatedly treated him. Each time he would improve, but after returning home, he would relapse, until finally he found an old woman who effected a permanent cure at the cost of a dollar. Inquiry evolved the fact that the medicine used was in a small vial (half ounce), and that

*Read in the Section on Ophthalmology of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

he was told to dilute one drop in twenty drops of water, and use it freely in the eyes several times a day. It was blue and thick, like glycerin.

This incident might have been unimportant had not my attention been attracted about the same time to an account of experiments carried on by the United States Department of Agriculture, in the use of copper sulphate as a germicide.[1] The most spectacular experiment, and the one first brought to my notice, was that pertaining to the algæ which produce the green scum on the surface of stagnant water. A bag containing crystals of copper sulphate was hung behind a boat while it was rowed along the margin of a pond. An infinitesimally small amount of the salt was dissolved from the crystals, yet it was enough to kill the algæ.

A great variety of organisms, an idea of which is given by the following list, was made the subject of these experiments.

Bacillus mycoides, Bacillus megatherium, Bacillus mesentericus, Bacillus mesentericus fuscus, Bacillus subtillis, Bacillus prodigiosus, Bacillus liquifaciens phosphorescens, pink yeast, *Bacillus coli,* sulphur yellow bacillus, *Pseudomonas radicola* (soy), *Bacillus sublanatus, Micrococcus radians, Pseudomonas radicicola* (alfalfa), *Bacillus violaceus laurentius, Pseudomonas amethystina, Bacillus caudatus, Bacillus rubrum.*

The exhaustive nature of the research and the manner of exhibiting the results are illustrated by the accompanying table pertaining to *Streptococcus pyogenes.*

EFFECT OF COPPER SULPHATE ON STREPTOCOCCUS PYOGENES.

Hours of Exposure.	Check. Colonies.	1 part copper sulphate to—					
		10,000 parts of water. Colonies.	25,000 parts of water. Colonies.	50,000 parts of water. Colonies.	100,000 parts of water. Colonies.	500,000 parts of water. Colonies.	1,000,000 parts of water. Colonies.
0	180	875	875	300	250	90	180
2	210	0	0	290	180	180	180
6	140	0	0	280	230	240	160
24	35	0	0	390	150	10	20

From the above table, it will be seen that the solution of copper is diluted 1:1,000, 1:10,000, 1:25,000, and so on to 1:1,000,000, as exhibited in the top row. The solutions containing the germs under investigation were exposed for periods ranging from two hours to twenty-four hours, as indicated in the vertical column on the left hand. In this manner it is shown that copper sulphate, in dilution 1:25,000, destroyed every germ in less than two hours. Similarly, *Bacillus coli* was destroyed in dilution 1:1,000,000 in six hours.

Thinking along this line, it occurred to me that the remedy referred to by my country patient was probably nothing more nor less than a solution of copper sulphate in glycerin, and that I was led to wonder whether we had not been mistaken. Regarding the method of using this remedy to get the surest results: In place of the application of the crayon or crystal to the lids by the physician once a day or less often, might it not be better to make a solution and put it in the hands of the patient, and have it used frequently. My former efforts to get a stable solution had not resulted in a success, and it may be that others have had similar experience.

Copper sulphate is so prone to decompose by oxidation that an aqueous solution soon loses its activity. After some experiments I made up a pint of 10 per cent. solution in glycerin, in which the salt was found to dissolve readily, and filled a number of two-dram vials and placed the following label on each: "Dilute one drop in twenty drops of water. Use freely in eyes four times a day. Increase strength; make fresh each time."

One of these bottles was given to each trachoma patient then under treatment, and this was continued during the subsequent months. It was found that it was well to commence with one drop in twenty drops of water, and use it four to six times a day. The patient was told to decrease the water as he found he could tolerate it, or increase it if it proved too irritating. Increased toleration was observed. Some patients would not complain, and rapidly increased to 1:5 or stronger; others complained of irritation lasting some hours. A few complained of a solution of 1:40, but subsequently tolerated it stronger. Some did not tolerate it well, and it was discontinued. In the main, however, it worked well and dozens of patients seem to have been permanently cured by the remedy.

One of the first cases in which I used the remedy in this manner was that of Miss H. The granulations had been squeezed out, and the lids were cicatrized and smooth. Yet she would occasionally develp trachomatous ulcers. These yielded best to the thermo-cautery. She always did well on copper stick, which she learned to use, and when she felt the irritation she would resort to the remedy. On this occasion the ulcer had got a start and was not responding well to treatment. She went home, a distance of fifteen miles, with a vial of 10 per cent. solution of copper sulphate, with directions to use it, and return in two days. She did not return for three weeks. When she came I was surprised. The eyes were wide open, the ulcer healed, and the lids were free from congestion. The remedy proved so grateful to her that she had divided the medicine with neighbors who had trachoma, and they all wanted the prescription, so well had it acted.

I guarded the prescription, preferring to dispense the medicine in order to keep the patient under observation. In this manner I have been able to observe a large number of cases; have inquired of each patient about the result, and their reports with few exceptions, are quite uniform. In only a few cases was there complaint of hazy vision for an hour after treatment.

On the whole, it is my opinion that this is the best home medical treatment that has come to my notice, and it is recommended that it be given a trial, under the belief that the frequent instillation into the eye of a fresh solution, made up from a stable solution in glycerin, is more efficient than the occasional application of the bluestone crystal.

TANNIC ACID AND MERCURY OXID OINTMENT.

Two other favorite remedies in past years have been glycerole of tannin, 4 per cent., and yellow oxid of mercury.

After investigating a score or more of remedies during the lapse of years, a few months' use of each has usually resulted in returning to the use of tannin and mercury oxid ointment, 1½ per cent., which resumes popularity after each new candidate for honors has been found wanting. They have the advantage of being almost universally tolerated. Even now, after dispensing with tannin for a year in favor of the above copper formula, I find myself writing prescriptions for the old friend, and adding some sulphate of copper for a companion.

Similarly, tincture of iodin and phenol may be in-

1. Bull. 76, Bureau of Plant Industry; Copper as an Algicide; also Bull. 100, The Effect of Copper on Water Bacteria.

corporated with effect, but nothing, in my present frame of mind, equals the old lady's cure for a dollar.

SILVER.

In conjunction with the above, a condition is found which indicated the use of silver. Like copper, it is deemed desirable to prescribe the remedy in such form that the patient may use it without harm, or without being discouraged by too much irritation. To meet this, it is usually employed in the office, or used at home in ½ per cent. solution once a day, preferably a short time before retiring.

In the presence of muco-purulent secretion nothing else seems to serve the purpose so well, and the drug is usually ordered in conjunction with one of the other remedies used during the day.

PREPARATION OF THE LIDS TO INCREASE THE EFFICIENCY.

Having selected a drug, of no less importance is the removal of trachomatous material which might prevent the remedy from reaching deeply situated infection. It may be remembered that Mandelstamm of Russia was the first to call attention to the squeezing out of the follicles. This was done by pressing the inverted upper lid against the thumb nail. His article appeared in German, and was presented to the English reader first by Dr. F. C. Hotz. It fell to my lot to first realize the importance of having a special instrument for squeezing out the contents of the follicles. The accompanying cut (Fig. 1) illustrates the first forceps used for this purpose, which is so simple that instrument makers have

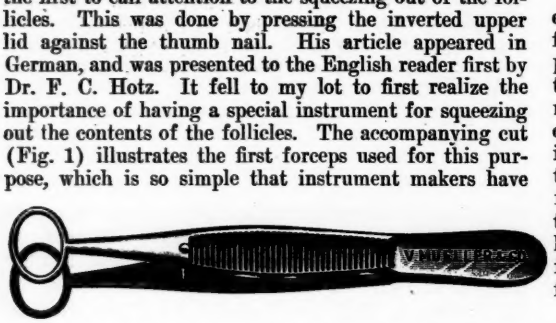

Fig. 1.—Forceps for squeezing out the contents of the follicles.

not succeeded in destroying its usefulness, as is often done by various modifications designed to cheapen them.

The instrument of Dr. Herman Knapp, known as the "roller forceps," is too well known to need comment. The great object is to get one blade well back into the retrotarsal fold, and express the trachomatous material. The instrument illustrated above has superior advantages when it is found necessary to reach into the angles, especially about the vicinity of the caruncle. Bleeding bears an important share in creating the immediate benefit that so often attends the operation of squeezing. All agree that thoroughness is the greatest desideratum connected with the removal of trachomatous material.

ANESTHESIA.

It is my usual practice to administer chloroform in conditions of active inflammation, and cocain in those cases presenting no particular irritation at the time. Ethyl chlorid furnishes a good substitute for chloroform, and if properly administered accomplishes the purposes admirably. In using cocain it has been found best to inject it hypodermically under the conjunctiva of the retrotarsal folds. It is advantageous to add 10 per cent. of 1:1,000 adrenalin chlorid solution, which diminishes the bleeding and increases the efficacy of the cocain. In the non-inflammatory types, a roll of cotton may be moistened with a 10 per cent. solution of cocain in 1:15,000 adrenalin, and inserted into the retrotarsal folds. After ten minutes the anesthesia is almost complete.

After squeezing, scarifying and milking out all the trachomatous material, apply a 10 per cent. solution of copper sulphate in glycerin, and scrub with cotton, so as to force it into the tissues. Rinse with water to remove excess, and prevent corneal irritation. A Belgian method which has been popular in the army, has been the rubbing on with the finger of powdered boric acid.

One of the errors of ophthalmologists in handling trachoma has been that of placing too much reliance on the operation, and not following it up with some remedy which would attack the disease after having exposed it.

COMPLICATIONS OF TRACHOMA.

The principal complications of trachoma are ulceration of the cornea and pannus.

Ulceration of the Cornea.—With the consideration of this condition it is pertinent to say a few words concerning the treatment. Ulcers occurring in conjunction with trachoma show little tendency to heal until the trachomatous infection has been brought under control by the germicidal action of the blood, chemical remedies, or actual cautery.

Following this, a healing tendency is usually rapidly established; pannus proceeds and nutrition follows. The favorite cautery in these cases is the Gruening platinum probe, which is heated in the Bunsen flame, and applied to the entire area. When the necrosis is shallow, rapid recovery usually follows, but when the layers of the cornea are destroyed down to the membrane of Descemet, it is usually found necessary to make a paracentesis through the floor of the ulcer, and keep the opening from closing by the repeated applications of a probe until the healing tendency has been established. The establishing of a fistula by cauterizing the margin of a perforating ulcer will often bring about a rapid change from a progressive destruction to rapid reparation.

As an aid to repair iodoform has held first place, but argyrol in 25 per cent. solution every two hours is well tolerated, painless and efficient.

Hypopion, in conjunction with trachoma, is similarly treated. It is the aim to divide the floor of the ulcer and carry the incision into the sound tissue on both sides. The pus escapes with the aqueous humor, and the anterior chamber is emptied twice daily with a probe, when found necessary, until no more pus is formed, after which the opening in the cornea is allowed to heal.

In the case of large superficial ulcers, it is at times found necessary to apply salicylic acid, 10 per cent., in alcohol, to the entire surface. Another remedy which acts admirably, is monochloracetic or trichloracetic acid, in saturated solution. The eschar is scraped off and a second application applied until the entire necrotic material has been removed. Following this, the healing will often proceed rapidly. Great care and judgment must be exercised in handling the above remedies.

In cases of sluggish and obstinate extension of an ulcerated area, I occasionally resort to hot physiologic salt solution, applied with an eye bath. The bath is applied, the head raised and the eye opened. The patient is required to repeat this as hot as can be borne, for fifteen minutes, four to six times a day. In the interval, ice compresses are used to reduce the temperature, and put the remaining microbes, so to speak, in cold storage. Compresses are placed on a piece of ice and changed every three minutes. In many cases it is believed that eyes have been rescued, which would formerly have been thought hopeless. Internal administration of strychnin, manganese and iron are employed to aid in counteracting a sluggish circulation, which is the greatest menace

to the integrity of an ulcerating cornea. So soon as pannus is seen at the margin of the corneal ulcer, recovery is in sight.

Much more might be said concerning the treatment of ulcers, but since they may occur in the absence of trachoma, further consideration is unnecessary.

Pannus.—Chronic pannus is one of the most obstinate complications one meets, and it deserves especial consideration. Many of us remember the occasional use of the gonorrheal virus from ophthalmia neonatorum, which was occasionally employed in cases on inveterate pannus from trachoma. As a student, this was impressed on me by the story of Dr. E. Williams of Cincinnati, which was re-told to every class for a number of years. He used to tell of a case that had defied all kinds of treatment, and the patient had become almost blind from pannus crassus. The physician, as a *dernier ressort,* explained to his patient that he had one remedy left, which might destroy the eye, but if it did not, restoration of vision might result.

The ultimatum was accepted. In the wards of the hospital a new-born babe was found to furnish the infection, and a minute quantity of the virus was introduced into the eye. Violent inflammation was set up, ran its course, and ultimate recovery was the result. The grateful patient begged the doctor from time to time to tell him the name of the wonderful remedy, and finally he was made to swear an oath never to divulge it to any living mortal, and after being duly impressed, the fact was imparted to him that the remedy in question was "glandola." The climax of the story came in a letter which eulogized Dr. Williams for his skill, and the knowledge of a remedy unknown to the druggists and doctors of the times, finishing with the doggerel:

> "But, however that may be,
> I once was blind, and now I see;
> 'Glandola' did the work for me."

It did not fall to my lot to see this remedy employed, but its use was not extremely rare in the clinics of Europe at an early period.

JEQUIRITY.

The use of gonorrheal virus was discontinued when the discovery of jequirity was announced to the world by the eminent De Wecker of Paris, whose popularity caused a wave of enthusiasm over the new remedy to spread over the world scarcely less rapidly than that of cocain and the Roentgen-ray. Unlike the history of cocain the popularity of jequirity met with a sudden reversal, and an ebb tide of condemnation recoiled with such vigor as to almost sweep the remedy into oblivion.

It may serve a purpose here to relate how a wealthy citizen of Rio de Janeiro suffered from trachoma and pannus; how he made a trip to Paris; how he improved under the copper crystal treatment, and how he relapsed after returning home. A second and a third time he came and returned improved, but not cured. At last, when in despair, he heard of a tribe of Indians in a remote region, who had a remedy. In desperation he made the trip, submitted one eye to the medicine man, who made an infusion of the bean *Abrus precatorius,* moistened a compress, and applied it to the eye. The result was a fulminating inflammation such as is familiar to most of us, but which quickly subsided, with the happiest of results. A similar treatment of the second eye followed, with the same result. An account of this experience was sent to De Wecker, together with a sufficient number of the beans, and observations were commenced. Every phase of trachoma, and in fact every type of conjunctivitis and corneal inflammation was subjected to the remedy. The old chronics who filled the clinic for a daily dose of silver or copper were, in most instances cleared up, so to speak, and ulcers and pannus were seen to yield in a manner and with such promptness as had never been seen before. The first publication from De Wecker on the subject was copied, and in a year the use of jequirity was almost universal. The recommendation was so indiscriminate that but one result could follow. Almost as rapidly as confidence was established, it was shaken by adverse reports. The loss of eyes was reported, and it was soon regarded as too hazardous a remedy to use except as a last resort, and it found its place in the same category as infection from the gonococcus.

The adverse criticism was so definite that one had poor defense in case of a malpractice suit for producing an inflammation of such a type as that which resulted from jequirity. During the following decade the remedy was comparatively little used. Seldom in the history of medicine has such a popular wave of enthusiasm been followed by almost as complete and rapid a discontinuance of the use of the remedy.

Taken in its entirety, the decision both *pro* and *con* was a grave mistake. First, the remedy was rushed before the profession before it was fully tried out. Ulcers of great variety of types were seen to yield under the influence of the drug, and it happened that the cornea did not suffer in the first hundred cases in which it was tried. The want of caution that this produced led to the loss of the eyes in a great many cases in which the primary disease for which it was used lacked sufficient seriousness to justfy taking the risk. Besides, it was found that the infusion in plain water was a good culture medium for a large variety of micro-organisms. In a few days, and before the characteristic membrane was produced, the solution was usually teeming with micro-organisms, which, although usually non-pathogenic, were occasionally a source of infection to the cornea.

In this connection I desire to add my influence to cause the pendulum to swing in the other direction. The introduction of jequirity found me practicing in a community which abounded with neglected trachoma. It was my fortune to use jequirity in infusion of sublimate and boric acid, and during a period of twenty years confidence in the remedy has never been shaken. It was my fortune not to have any serious complications before learning of the contra-indications, and it was also my fortune to commence the use of the remedy in a form much more diluted than originally advocated. For this reason the remedy preserved its popularity in my hands and brought numerous cases of pannused cornea under its influence.

The operation of this remedy may be illustrated by the case of a young woman who was almost totally blind with pannus crassus. So opaque was the pannus that the outlines of the pupil were not discernible. She was carried through three courses of jequirity; the recovery from each of which let in more light, until she could see her way. Transparency increased with the months, until she could read, and eventually no one would have suspected that she had ever been blind from pannus crassus.

Another case which is recalled was that of a young man who had recurrent superficial ulcers and ever-present irritation and pannus for a period of two years,

during which time he had been under the care of the most eminent oculist of the west, whom I have ever honored as a cyclopedia of ophthalmic wisdom.

One course of jequirity caused a thrombosis and atrophy of all the vessels and left him with a clear cornea. He has never had a relapse.

From the above it may be easily inferred that I am an advocate of the remedy, and I take this opportunity to endorse it with caution, and at the same time to comment on the manner of its use.

Reference to the literature reveals the fact that it was almost always used in solution of 3 or 4 per cent. and stronger. This strength causes a rapid infiltration of

Fig. 2.—Excision of the tarsus, first act. Eversion of the upper lid with forceps (Kuhnt).

the lids and cornea. The pain is intolerable. Local applications do not relieve it, and morphin is required. The rapid infiltration does more; it endangers the nutrition of the cornea. A superficial sloughing takes place, and general infection following may lead to the results which led to the abandonment of its use.

At the time of its introduction, and ever since, I have had my patients directly under my personal control, and could see them at once in case of any untoward symptom. This led me to suspend the treatment on the development of severe pain, and the early adoption of the plan of commencing with a very weak infusion, one-fourth of 1 per cent. This is employed twice a day for two days, during which time the tissues stretch to accommodate the infiltration. In case the eye is sensitive to the remedy, a solution of this strength is usually sufficient to produce the desired reaction. In case toleration exists the strength of the solution may be increased to one-half of 1 per cent. The eye soon develops tolerance, and commences to improve before the discontinuance of the use of the remedy. It is desirable to secure a decided membrane covering the surface of the tarsal conjunctiva. It may extend over the retrotarsal fold, in which case care will be necessary to separate the surfaces which lie in contact or adhesion may take place.

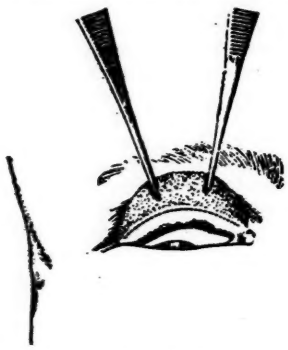

Fig. 3.—Second act. Complete eversion of the inverted upper lid and exposure of the retrotarsal folds. First incision along the dotted line (Kuhnt).

A word concerning the preparation may not be out of place. It will be found very difficult to remove the cortex of the bean, and reduce it to a powder unless one is provided with the proper means. The suggestion is to get a hand pepper grinder, with which many persons grind pepper fresh while at table. The first turn breaks the cortex. The beans are emptied out, the cortex removed, and the kernels replaced in the grinder. They are ground through several times until a moderately fine powder results. Divide into one grain powders. One powder in two drams of a 2 per cent. solution of boric acid will be the initiative dose. It is ready for use in fifteen minutes, and should be made fresh every day.

SURGERY.

In conjunction with the treatment of chronic trachoma, there are two surgical procedures on the lids which should be practiced whenever indicated, viz., entropion and excision of the tarsus.

Entropion.—It would hardly seem necessary to mention entropion, yet there are a few points to which attention might be called with advantage. The operation which I advocate is that of Anagnastakis. This operation was practiced before that of Dr. Hotz. In my earlier operation, an attempt was made to follow the Hotz method, but by degrees I gradually reduced the size of the lower skin flap by making the incision nearer the ciliary border. An incision was made in the margin between the line of the cilial and Meibomian glands. The graft of the lid has been discontinued. The skin of the upper flap is not included in the sutures.

Fig. 4.—First act in the operation for removal of the tarsus without sacrifice of the fairly healthy conjunctiva (Kuhnt).

A canthoplasty is often indicated in case of blepharophimosis. The literature of entropion and its treatment is so replete, and so accessible in the text-books, that more than the above mention seems out of place here.

Excision of the Tarsus.—The consideration of excision of the tarsus, on the contrary, is not so well understood nor practiced, and this opportunity is taken to thank Dr. Kuntz for originating and Dr. Wood for repeatedly calling attention to this operation for finishing up the process in those chronic cases of trachoma in which the lid becomes full of infected cysts, nodules and cicatricial bands, which produce recurrent ulceration.

In these cases, the removal of the tarsus has become classic, and it is hoped that Dr. Wood, who has had

considerable experience with this operation will enlighten the Section with his more recent experiences. Attention is also called to an article in the *Ophthalmic Record* on American operators. The indications for the operations which have been virtually agreed on by its advocates are the following:

1. Conditions in which the disease is not amenable to medical or surgical treatment by which the palpebral conjunctiva may be preserved. These include tarsi which show foci of trachomatous infiltration or granular deposits which cause recurrent inflammation or cysts that are not eradicated by curettement or cauterization.

2. Cicatrization which offers an irregular surface with a mucous covering, and the dryness and roughness of which are menaces to the corneal surface.

These conditions have defied all measures, and are ever menaces to the integrity of the cornea. It is this condition which has led operators in the past to excise the retrotarsal fold. The removal of the tarsus, together with the diseased portion of the retrotarsal fold, would seem to limit the excursion of the lid and endanger the supply of the moisture to the eyeball through obliteration of the ducts of the lachrymal glands. This is found not to be the case. In the first place, the limitation of mucous membrane is less objectionable than the presence of diseased membrane. In the second place, it is established knowledge that the lachrymal glands are not required for the supply of ordinary moisture. This is sufficiently supplied from the mucous cells and acinous glands. This fact furnishes the surgical justification for removing the lachrymal glands in cases of epiphora, where it is found impossible to establish satisfactory drainage through the naso-lachrymal duct. The operation of removing the tarsus has been developed by Kuntz, whose cuts illustrating the procedure are so clear as to require little description. The liberty is taken of reproducing them from the paper of Dr. Casey Wood.[2]

First.—The lid is everted and the convex border grasped by two catch forceps (Fig. 2).

Second.—The everted lid is then everted on itself, exposing the retrotarsal fold (Fig. 3).

Third—An incision is made beyond the line of diseased tissue separating the portion of the conjunctiva in which are placed three waxed sutures, or preferably 00 catgut sutures. One suture should be exactly opposite the middle of the margin of the lid; the others at equal distances on either side. An incision is made through the tarsus and parallel to the lid margin, leaving the conjunctiva untouched, which may seem normal or likely to become normal (Fig. 4). The tarsus is then dissected out back to the original incision, as shown.

The cut edges are now united. The original method as published inevitably brings the cornea in contact with the knots. This is avoided by arming each end of each suture with a needle. These are brought through the skin and secured to the outside.

The above is submitted with a consciousness that the paper is open to criticism. The subject is too large for a complete consideration.

It is hoped that my observations on copper sulphate will find verification at the hands of others. If so, the time consumed by the presentation may not be wholly wasted.

DISCUSSION.

DR. J. C. HANCOCK, Brooklyn, stated that in 1890 or 1891 Dr. Weeks and Dr. Marple performed the first operations known as "grattage" in this country. Now few ophthalmologists do the grattage operation at this late day, but most of the operations done have this as a basis. A short time after its introduction Dr. Hancock performed the grattage operation on about one hundred and twenty-five cases of well-marked trachoma in one institution. While for years before there had been frequent exacerbations of the trachoma of a very acute form resulting in much damage, there has never been such an attack since the operations. Now, he almost invariably scarifies the trachomatous lids with the Jameson trachomatome and squeezes out the ruptured granules with forceps. He follows this with antiseptic applications. He never uses cupric sulphate or allows it to be used in his office or clinic, believing that the results of the use of this caustic are quite as grave as the results of the disease.

DR. HERBERT HARLAN, Baltimore, said that, while his experience with chronic trachoma is not at all small, with recent trachoma it is very much larger. The Presbyterian Eye, Ear and Throat Hospital is the detention hospital for emigrants coming into Baltimore. There are not many patients with chronic trachoma, because those individuals are shipped back at once to the countries from which they came. A mother with five or six small children may be detained for a short time, to be shipped back if not cured. The severe chronic trachoma can not be cured, but Dr. Harlan has sometimes got patients well enough to pass muster with the Public Health and Marine-Hospital Service. In the chronic cases the patients usually remain a short while and go back to Europe. He has found that the most satisfactory treatment is grattage followed by application of ichthyol and perhaps, rarely by sulphate of copper. He has also had good results with argyrol.

DR. OSCAR WILKINSON, Washington, D. C., stated that for the past year he has been using radium and has found it to be of exceptional value. He believes that if there is any place in medicine for the use of this agent it is in the treatment of chronic trachoma. He has been using 1/10 gm. of 20,000 radioactivity. He uses cocain, everts the lids and makes the application to the surface for from five to fifteen minutes, according to the effect desired. Its use is painless and there is no reaction at the time, but some reaction follows within the next few hours. The eye is slightly irritated for twenty-four hours, after which there is decided amelioration for several days. The treatment is applied once or twice a week. Since using it he has used no expression method whatever. He has always found sulphate of copper of benefit in the chronic recurrent cases and has never seen harm from its use.

DR. JOHN E. WEEKS, New York, said that he does not think that he has ever seen a case of trachoma that was not chronic. The paper deals with trachoma in the second stage. Trachoma is a chronic conjunctivitis, which presents itself in three stages, the early stage in which the granulations are discrete, the conjunctiva hypertrophic; the second stage, in which the granulations become coalesced, and there is formation of cicatricial tissue; and the third stage, in which there is complete cicatrization. The third stage is not operable, so far as trachoma is concerned. One may then operate for the cicatrization, but not for trachoma, as that condition no longer exists. In Dr. Weeks' opinion, the operative treatment of trachomatous tissue is well dealt with by Dr. Prince, who recommends the use of sulphate of copper in very weak solution in after-treatment. Some years ago, Dr. Weeks made some experiments as to the comparative value of the solutions used in ophthalmic practice, and in the strength of 1 to 5 of the sulphate of copper the staphylococci were not destroyed in five minutes. In the strength advised by Dr. Prince, it is not a germicide against any known pathogenic micro-organism. It is a stimulant, but not a germicide.

DR. A. E. PRINCE, Springfield, Ill., said that he trusts that what he said regarding the use of copper sulphate will not be attributed to an error of personal enthusiasm. He believes those who object to its use are wrong. Dr. Prince took the reports from the laboratory at Washington, which gave a long list of germs that have been tested with the copper sulphate. They are destroyed by solutions varying in strength from 1/10 per cent. to 1/100,000 per cent. Is it not possible, Dr. Prince asked, that the solution acts on the trachoma

2. Am. Jour. Ophth., July, 1903.

germ? He has been pleased with the reports others have made on the use of this method. He has put this remedy into the hands of over a hundred patients and it has invariably benefited them. Dr. Prince declared that he is satisfied, and that when he can use a remedy for years and get good results he considers it a good thing. The bulletins referring to the experiments are accessible. Since he claims no authorship in the experiments, he invites an examination of the above-mentioned reports. This remedy does not cure all cases. It is an adjuvant to other methods. It is safe; it is cheap. Dr. Prince hopes that his judgment may be backed by the experience of the profession.

THE OCULAR TYPHOID REACTION.

PRELIMINARY REPORT OF A MODIFICATION OF THE OCULAR TEST OF CHANTEMESSE.*

WALTER W. HAMBURGER, M.D.

CHICAGO.

On July 23, 1907, Professor Chantemesse[1] announced at a meeting of the Academy of Medicine in Paris a new characteristic reaction for the diagnosis of typhoid fever. Two months later[2] he published the results of this diagnostic test applied to 128 patients, together with a brief description of its method of application.

The test consisted of the instillation into the conjunctival sac of one drop of a solution made as follows: Gelatin plates covered with an 18 to 20 hour old culture of virulent typhoid bacilli were washed with 4 to 5 c.c. of sterile water. The suspension thus obtained was heated to 60 C., centrifugated and the supernatant fluid withdrawn. The centrifugated organisms were then dried and triturated. A second suspension of these broken up bacillary bodies was then made and allowed to stand for from two to three days at 60 C. The extract thus obtained after removing the disintegrated and digested rests was precipitated with alcohol, forming a fine coagulum. This was subsequently dried and powdered and dissolved in sterile water in the proportion of 0.02 mg. to a drop.

In a series of 128 cases, 70 cases diagnosed clinically as typhoid fever and giving positive agglutination reactions were tested. From two to three hours after instillation a diffuse redness of the conjunctiva was noted, together with a subjective sensation of warmth in the eye. Later lachrymation and slight exudation appeared in some instances. In from six to ten hours, the reaction had reached its height and persisted through the following day. This Chantemesse calls the "Ophthalmo-typhoid" reaction. All the cases responded positively.

Fifty cases of the series consisted of patients sick or convalescent from various diseases other than typhoid. These did not give a positive agglutination test. On dropping in the solution, most of the eyes suffered a slight reddening and conjunctivitis which disappeared usually in four or five hours. This is spoken of as a negative reaction. The differentiation is based on the variation in intensity and duration of the inflammatory reaction.

Eight cases, tested early in the disease from the fifth to the twenty-first day gave a positive ocular test while the serum reaction was still negative. These all gave positive agglutination tests later in the course of the disease. It is more particularly on the evidence offered by these eight cases that Chantemesse states the particular interest in the ocular reaction lies, in so far that a positive diagnosis of typhoid might be obtained days before the sero-diagnosis appeared. Further, many cases now allowed to go undiagnosed because of the failure of an early agglutination, would be elucidated, thus extending our knowledge of the disease and of the domain of infections caused by the typhoid bacillus.

The observations here recorded were made with the hope of confirming the results of Chantemesse by the use of a typhoid extract prepared in a much simpler way. The solution was prepared by Dr. D. J. Davis as follows: The bacteria were grown for twenty-four hours on plain agar slants. They were then washed from the surface with plain salt solution and an emulsion prepared, which contained 3,000,000,000 bacilli per cubic centimeter. This was placed in the incubator for four days at 37.5 C. At the end of this time the bacteria were removed by prolonged centrifugation and the supernatant almost clear fluid was drawn off and heated to 60 C. for 30 minutes. This fluid was tested and found to be sterile. No bacilli were found in stained smears. The fluid thus prepared was used for the tests, the usual precautions as to cleanliness, care in instillation, etc., being as strictly observed as in the technic of ocular tuberculin manipulations.

TABLE 1.[3]—TWENTY-SEVEN CASES DIAGNOSED CLINICALLY AS TYPHOID FEVER, GIVING EITHER A POSITIVE AGGLUTINATION TEST OR BLOOD CULTURE AND REACTING POSITIVELY TO THE OCULAR TEST.

Number.	Duration of Disease.	Agglutination.	Blood Culture.	Ocular Test. Reaction Present After.	Ocular Test. Duration.	Ocular Test. Degree.
1.	5 days.	+	0	10 hours.	72 hours.	++
2.	5 days.	+	0	6 hours.	72 hours.	+++
3.	3d week.	+	0	3 hours.	72 hours.	++
4.	3d week.	+	0	18 hours.	48 hours.	+
5.	3d week.	+	0	18 hours.	48 hours.	+
6.	3d week.	+	0	18 hours.	48 hours.	++
7.	4th week.	+	0	18 hours.	48 hours.	+
8.	4th week.	+	0	6 hours.	72 hours.	++
9.	4th week.	+	0	6 hours.	48 hours.	++
10.	5th week.	+	+	18 hours.	48 hours.	++
11.	5th week.	0	+	18 hours.	48 hours.	+
12.	5th week.	0	+	18 hours.	72 hours.	++
13.	5th week.	+	0	18 hours.	48 hours.	+
14.	5th week.	+	0	6 hours.	48 hours.	+
15.	6th week.	+	+	18 hours.	72 hours.	+++
16.	7th week.	+	0	18 hours.	48 hours.	++
17.	7th week.	+	0	18 hours.	48 hours.	++
18.	7th week.	+	0	6 hours.	24 hours.	+
19.	7th week.	+	0	12 hours.	24 hours.	+
20.	7th week.	+	0	12 hours.	24 hours.	+
21.	7th week.	+	+	12 hours.	24 hours.	+
22.	8th week.	+	0	18 hours.	48 hours.	++
23.	8th week.	+	0	18 hours.	48 hours.	+
24.	9th week.	+	0	18 hours.	48 hours.	+
25.	9th week.	+	0	18 hours.	48 hours.	+
26.	9th week.	+	0	18 hours.	48 hours.	+
27.	10th week.	+	0	6 hours.	24 hours.	+

The reaction was tried in a total of forty-eight cases; twenty-seven cases diagnosed clinically as typhoid fever gave a positive agglutination test or blood culture and reacted positively to the ocular test (Table 1); fifteen control patients, suffering clinically from a variety of maladies other than typhoid fever, failed to react; six cases diagnosed clinically as typhoid fever but not presenting either a positive agglutination reaction or a blood culture were likewise tested, resulting in four negative and two positive reactions. (Table 3.)

The positive reactions obtained in the proved up cases

* From the clinical laboratories of the Presbyterian Hospital.

1. A brief report appeared in the Deutsche med. Wochschr., 1907, No. 31, p. 1264.

2. L'Ophthalmo-diagnostic de la Fièvre typhoide, Deutsche med. Wchschr., 1907, No. 39, p. 1572.

3. EXPLANATION OF TABLES.—The hours indicate when eye was first observed after instillation; reaction doubtless began earlier. The intensity of reaction has been symbolized in the last column as follows:

+ Diffuse palpebral injection with little, if any discharge.

++ Deep palpebral injection; beginning corneal injection; slight mucopurulent discharge.

+++ Marked palpebral and ocular conjunctivitis with pronounced mucopurulent discharge; slight edema of lids.

presented a number of interesting features. The stage of the disease bore no striking relation to the degree of the reaction except in some instances suggesting a possible increase in intensity during the active process of the infection. In no cases was I able to obtain an ocular reaction prior to the agglutination phenomenon. However, in only two cases was this tried as early as the first week. Further observations may reveal results comparable to the eight cases of Chantemesse.

TABLE 2.—FIFTEEN CONTROL CASES. PATIENTS SUFFERING FROM DISEASE DIAGNOSED CLINICALLY AS OTHER THAN TYPHOID FEVER AND NOT REACTING CHARACTERISTICALLY TO THE OCULAR TEST.

Number.	Clinical Diagnosis.	Ocular Test. Reaction Present After hours.	Duration.	Degree.
1.	Acute artic. rheum., organic heart dis.	6	Disappeared completely in 24 hours.	Slight reddening.
2.	Neurosis.	6	Trace remaining in 24 hours.	+
3.	Alcoholic neuritis...	6	Trace remaining in 24 hours.	+
4.	Pleurisy with effusion.	6	Disappeared completely in 24 hours.	Slight reddening.
5.	Organic heart dis...	6	Disappeared completely in 24 hours.	Slight reddening.
6.	Organic heart dis...	6	Disappeared completely in 24 hours.	Slight reddening.
7.	Hour-glass stomach.	6	Disappeared completely in 24 hours.	Slight reddening.
8.	Carc. en curiasse....	0	0	0
9.	Acute art. rheum....	6	Disappeared completely in 24 hours.	Slight reddening.
10.	Alc. gastritis.....	6	Disappeared completely in 24 hours.	+
11.	Tuberculous pleurisy.	12	Disappeared completely in 24 hours.	Slight reddening.
12.	?	0	0	0
13.	Chronic osteomyelitis.	0	0	0
14.	Chronic Bronchitis..	0	0	0
15.	Neurosis	0	0	0

The earliest reaction was evident after an incubation period of three hours. Six cases examined six hours after instillation were all positive.

The average duration of the reaction was from forty-eight to seventy-two hours; the limits ranged from twenty-four to ninety-six hours.

TABLE 3.—SIX CASES DIAGNOSED CLINICALLY AS TYPHOID FEVER, BUT NOT REACTING TO THE AGGLUTINATION TEST OR FOR OTHER REASONS NOT BEING INCLUDED IN TABLE 1. DOUBTFUL CASES.

Number.	No. of days or weeks of Disease.	Agglutination.	Blood Culture.	Remarks.
1.	4th week.	+	0	Both conjunctivæ inflamed at time of instillation. No difference apparent at end of 18 hours.
2.	6th week.	0	0.	Ocular reaction negative. No difference at end of 18 hours.
3.	7th week.	+	0	Ocular reaction questionable. Definite difference in degree of injection may have been present. Doubtful.
4.	4th week.	No test.	0	Slight difference present in 6 hours and persisting 24. Similar to control cases. Reaction (?).
5.	?	No test.	0	Ocular reaction positive. Duration 48 hours.
6.	3d week.	No test.	0	Ocular reaction positive. Duration 48 hours.

A typical reaction may be described as follows: From three to six hours after instillation there appears a diffuse redness of the inner caruncle, plica semilunaris and palpebral conjunctiva. At the end of this period or a little later, a yellow-white, translucent mucopurulent discharge appears and collects at the inner canthus. The morning following the patient frequently complains that his eye "was stuck together when he woke up in the morning," and there are evidences of a dried crusted exudate on the margin of the lids and on the lashes. It is the exception for patients to complain of subjective symptoms other than "watering of the eye," or smarting or soreness. The feeling of a foreign body or a grain of sand which so frequently follows an ocular tuberculin test was not complained of. Likewise the hyperemia of the caruncle was not nearly so prominent as in the tuberculin test. If there is doubt as to the existence of a reaction, I have found that the conjunctiva covering the lower and outer fornix of the tested eye is the point at which the greatest injection occurs and that a comparison with the other eye may decide a doubtful case.

The negative reactions in control cases were examined critically because of the slight reddening obtained in some instances. In a total of fifteen cases five showed no apparent change; seven showed a slight, though definite diffuse redness which disappeared entirely in twenty-four hours; three showed a more pronounced hyperemia, which lasted over twenty-four hours, but which at no time partook of the degree of injection noted in positive cases. The presence of a slight inflammatory reaction in these negative cases has led me to the belief that there exists some irritating principle in the extract as we have prepared it and in the alcoholic precipitate of Chantemesse, which is not specific and which may be eliminated by greater dilution of the active principle or by its removal by physical or chemical means. Work toward this end is now under way.

The six cases classed as doubtful in Table 3 are self-explanatory and are included for the sake of completeness. With the exception of the last case there is no suggestive contradiction. This patient, a woman 25 years old, three days after instillation developed unmistakable evidence of tuberculous meningitis and died forty-eight hours later. Further inquiry revealed a history of typhoid one year previous. It is too early to say whether the ocular reaction was due to persisting bodies from the previous typhoid infection or whether the meningitis was responsible. Here again more extensive observations are needed to decide.

The series is instructive in showing the necessity of careful inspection and analyses of ocular phenomena. Until the exact limitations of ocular-typhoid tests have been ascertained by experience gained through observation of a large number of cases, one should not interpret them as final, but should weigh them carefully in conjunction with other available data.

SUMMARY.

By the instillation into the eyes of typhoid patients of one drop of an extract of the typhoid bacillus, a reactive inflammation has been caused which probably is specific and possibly universal. In diseases other than typhoid, a less intense and shorter reaction occasionally appears which in most cases may easily be differentiated. These results agree closely with those obtained with the alcoholic precipitate of Chantemesse.

Ocular Diagnosis of Tuberculosis in Chronic Tropical Affections.—Treille contributes an article on this subject to the *Caducée*, February 14, emphasizing the importance of detection of tuberculosis in its incipiency in persons affected with chronic tropical affections. He expatiates on the frequency with which tuberculosis becomes superposed on them. Its revelation by the ocular differential test would in many cases explain why the patients fail to recover health, and it would also be the signal for prompt return to a temperate clime. It has been his experience that tuberculosis almost invariably runs an exceptionally rapid and fatal course in the tropics. It is best not to attempt to fight it there but to return home, where it may be arrested in its incipiency by proper treatment.

Special Article

THE MIDWIVES OF CHICAGO,

BEING A REPORT OF A JOINT COMMITTEE OF THE CHICAGO MEDICAL SOCIETY AND HULL HOUSE.

BY THE COMMITTEE ON MIDWIVES.

RUDOLPH W. HOLMES, M.D., CHAIRMAN.

ALICE HAMILTON, M.D. CHARLES S. BACON, M.D.
CAROLINE HEDGER, M.D. HERBERT M. STOWE, M.D.

CHICAGO.

Introduction by the Committee.

About four years ago the Council of the Chicago Medical Society appointed a Committee on Criminal Abortion whose purpose should be the investigation of the crime of feticide. Very shortly the chief function of the committee became that of aiding public officials in prosecuting those guilty of this crime. Also this committee was able to secure the removal of all criminal advertisements from the local press—partly by moral suasion and partly by securing the cooperation of the postal authorities. In pursuance of its duties the committee gradually became cognizant of the relatively great frequency of the crime of abortion among midwives; at the same time the members of this committee were made to realize the deficiency of these practitioners in learning and ability. Not infrequently the committee found from the evidence presented before the coroner's inquisition and the criminal court that their practice was not confined to the duties limited by law, but that they were, in fact, practicing medicine. As midwives are permitted to care only for women in full time normal labor, the mere fact that they were treating miscarriages and early abortions placed them without the pale of the law.

Last spring, on the motion of the chairman of the Committee on Criminal Abortion, the Council appointed another committee—the Committee on Midwives—which should investigate the midwife class. The work of this committee was made possible by the promise of Hull House to defray all cost which might be incurred in the course of the investigation.

At the outset the members of this committee were fully convinced that midwives now, and probably for years to come, are socially inevitable; at the same time the committee appreciated the fact that the present laws governing midwives are grossly inconsistent with the laws controlling the practice of medicine. In Illinois, as in most states of the Union, the regulations of midwife practice are the same as they were when the state began the control of midwifery. The regulations covering the practice of medicine have advanced fairly consistently with the progress of medical knowledge. The laws governing the practice of midwifery are utterly absurd and inadequate when compared with the requirements of obstetric practice by doctors of medicine.

The state of Illinois makes rules covering the amount of preliminary education of a prospective medical student. It defines the duration of medical study, the number of hours to be devoted in each year, the subjects which must be taught, and in the case of obstetrics requires the candidate for the degree to have had at least three cases.

In contrast to this the prospective midwife is not required to have any preliminary education—in fact, may be illiterate. She is not required to have any correlated instruction in obstetrics before her eligibility is proven, and she may obtain her license without having seen a single confinement case. The law does not concern itself with the status of the midwife school, and as a result the regulations of the State Board of Health do not concern themselves with the qualification of the candidate for a midwife's license—the woman's ingenuity to pass an examination is the criterion. And yet a woman who can neither read nor write in any language can pass a written examination!!!

The committee feels that the time is now ripe for a readjustment of midwife requirements, and that there should be adequate regulations commensurate with the demands of modern obstetric practice.

The committee can not express its appreciation too strongly of the valuable aid given it by Miss F. Elizabeth Crowell. Without her indefatigable labors in supervising the investigation little would have been accomplished. Her able report to the committee covers completely the derelictions of duty, the ignorance and incompetence of the midwife as a class as she exists among us. Likewise we must express our thanks to the Visiting Nurse Association of Chicago for invaluable aid in securing the names and addresses of midwives. Mrs. Rogers, a former member of the staff of the Visiting Nurse Association, who personally visited each and every midwife covered in the report of Miss Crowell, deserves our commendation. Too, we must mention our deep obligation to Professor Henderson, of the University of Chicago, for his repeated counsels during the progress of the investigation.

The Report to the Committee.

MISS F. ELIZABETH CROWELL, NEW YORK.[1]

The investigation was made by Mrs. M. J. Rogers, of the Visiting Nurse Association, who obtained from the midwives information regarding their personal, social and professional status. Later a special detective who had had several years' experience in this particular line of work in New York visited the same midwives for the purpose of obtaining information regarding their criminal practice. The entire city was covered from Edgewater to South Chicago and from the lake to the extreme western limits.

In all 223 midwives were visited, and 21 only, or 9 per cent. of the total number, were correctly registered, so that the results as shown may be considered representative of the entire field of local midwifery practice. Every effort was made to have the investigation complete and to provide for the accurate recording of the information obtained by the investigators. For convenience and to save time, the city was districted, and midwives in each district were visited consecutively, first by the nurse, then by the detective. Printed cards with blank spaces for information obtained under each heading were furnished to the nurse. These cards served two purposes—first, to refresh her memory as to the information desired, so that the same data should be secured from each midwife; second, the opportunity for the immediate recording of the information thus obtained precluded the possibility of the errors which naturally would have arisen had she relied solely on her memory and attempted to record the details of each interview after her return home at night. The detective was furnished with cards bearing the name and address of the midwife previously visited by the nurse. In order to avoid exciting suspicion, the results of the detective's interview with the midwife were jotted down on the back of this card in some neighboring store or conveniently adjoining doorway and afterward this information was transferred to the card originally used by the nurse. In this way each card contains an accurate record of the social, professional and criminal status of every midwife visited. The accompanying tables contain the tabulated results of the investigation as shown by these cards.

In Chicago 47 per cent. of the births reported are returned by midwives. The greater part of these births so reported occur among the Italians, the Slavs and the Germans. An analysis of 1,076 births when the classification was based on the nationality of the mother shows the following results: Among the Italians 86 per cent. were reported by the midwives; among the Austrians, Hungarians, Poles and Bohemians, 74 per cent.; among the Germans, 68 per cent.; among native-born Americans, 35 per cent.; among Russians, 25 per cent. One cause which has contributed toward lowering the amount of midwifery practice among the Russian Jews is the excellent work of the Chicago Lying-in Hospital and Dispensary and of the maternity dispensary of the University of Illinois, which furnish attention to over 2,000 patients annually, the great majority of whom are Jewish. We have found this

1. Miss Crowell's report on the midwives of New York appeared in Charities and the Commons, Jan. 12, 1907, and was abstracted in THE JOURNAL, Feb. 23, 1907, page 712.

preponderance of Jewish patients also in connection with the work of the New York Lying-in Hospital and Dispensary.

It is impossible to arrive at anything like an accurate estimate of the number of midwives practicing in Chicago. Speaking roughly, there are between 500 and 600. This estimate is based on the number given in the last issue of the city directory—466—and the number registered at the office of the county clerk since 1878, namely 1,634. This registry is absolutely valueless for all practical purposes. There is no separate record of licensed midwives, but the registry is an indiscriminate jumble of physicians, osteopaths, midwives, et al. There has never been any attempt to revise the record or to bring it up to date in order to make it a reliable means of reference. Midwives who were 60 years old when they registered in 1878 may still be practicing at the hale old age of 89 for aught to the contrary to be gleaned from the official record. There is no evidence that any one of the 1,634 has changed her name, her place of residence or her plane of existence, supposing her to have been translated to another world, since the day of original entry. Of the 466 names given in the city directory but 346 could be identified in the register, and in the majority of cases they were incorrectly recorded. This does not necessarily mean that the remaining 120 midwives were not licensed and registered, but it does mean that it is impossible to obtain any trace of them from the only source of official information concerning them. Thirty-nine of the 120 were investigated and 26 produced a license and certificate of registration each. The remaining 13 refused to be interviewed. On the whole, allowing a reasonable reduction of the number of registered midwives by death, by old age or by changes in living conditions, whereby it was no longer necessary or desirable for certain ones to continue the practice of the profession, I believe that 500 is a conservative estimate of the number of midwives practicing in Chicago to-day.

Over one-half of the number (123 out of 223) were incorrectly registered, and one-fourth (57 out of 223) were impossible to trace. One midwife, a Polish woman, said frankly that she had no license and that she intended to take her examination before the state board in the fall. In the meantime she enjoys a large and flourishing practice. Her home was filthy, and so was her person and clothing. Classified according to nationality it was found that 37 per cent. of the midwives visited were German; 16 per cent. were Poles; 14 per cent. were Bohemians; 5 per cent. were Swedes; 3 per cent. only were Italians, and 13 per cent. were made up of natives of Russia, Austria, Hungary, Norway, United States, France, Denmark, England, Scotland and Belgium; 9 per cent. were unclassified, they having refused to give the nurse any information whatever. (Table 1.)

The small number of Italian midwives appears out of all proportion to the number of births reported among Italian mothers. On inquiry it developed that the practice among the

TABLE 1.—PROFESSIONAL DATA.

Nationality.	Total.	Registration at Health Dept.			Length of practice.			Methods of practice.								Criminal history and practice							
		Correct.	Incorrect.	Not registered.	1 to 9 years.	10 to 19 years.	20 years and over.	Attend normal cases only.		Equipment and cleanliness of bag.						Conviction, selling drugs.	Indicted for crim. abor.		Offered to sell drugs.	Agreed to operate.	Receives patients in home.	Suspicious.	Incomplete—Information refused.
								Yes.	No.	Good.	Fair.	Bad.	Not seen.	None.			Trial pending.	Not guilty.					
German	84	7	52	25	14	35	27	62	7	54	6	..	10	1		1	1	1	2	25	10	10	15
Polish	36	6	19	11	19	13	3	31	4	21	9	2	2	1		1	1	..	1	3	2	2	1
Bohemian	31	2	20	8	6	18	7	28	3	22	5	2	..	..		..	..	2	..	3	..	6	..
Swedish	13	1	9	3	3	5	5	12	1	11	..	..	2	..		..	..	..	..	4	1	1	..
Italian	8	..	4	4	4	2	2	5	3	3	2	2	..	1		..	..	..	..	..	..	1	1
Russian Jew	5	1	3	1	1	1	2	3	..	1	1	2	..	..		..	..	..	..	..	..	..	2
Austrian	5	..	5	..	..	2	2	..	2	2	..	..	..	..		..	..	..	..	..	..	..	4
Hungarian	4	1	3	..	..	2	2	3	..	2	..	1	..	..		1	..	..	..	1	1	1	1
Norwegian	4	..	3	1	..	2	2	2	2	3	..	1	..	..		..	..	..	..	1	1	..	..
United States	4	2	1	1	2	1	1	1	2	2	..	1	..	..		..	..	..	..	..	..	..	2
French	2	..	1	1	..	..	2	2	..	1	..	..	1	..		..	..	..	..	1	1	..	..
Danish	2	..	1	1	..	..	2	2	..	2	..	..	..	..		1	..	..	..	1	..	..	..
English	1	..	1	..	..	..	1	1	..	..	..	..	1	..		..	..	..	..	..	1	..	..
Scotch	1	..	1	..	..	1	..	1	..	1	..	..	..	..		..	..	..	..	..	..	..	..
Belgian	1	..	..	1	..	..	1	1	..	1	..	..	..	..		..	..	..	..	..	..	..	..
Unclassified	22	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	1	10	2	1	..
	223	21	123	57	49	83	57	154	24	126	23	11	18	3		4	2	3	4	49	19	22	26

TABLE 2.—PERSONAL DATA.

Nationality.	Total.	Age.			Length of residence in U. S.			Education.								Dependent on practice.		Condition of home and person.				
		20 to 34 years.	35 to 49 years.	50 years and over.	1 to 9 years.	10 to 19 years.	20 years and over.	General.				Professional, diploma, etc.										
								Able to read and write.		Speak English.						Yes.	No.	Good.	Fair.	Bad.	Incomplete—Information refused.	Unclassified—Information refused.
								English.	Nat. lang.	No.	Yes.	No.	Foreign.	United States.	None.							
German	84	5	36	42	3	14	55	46	27	..	78	2	22	46	4	26	44	66	9	3	15	..
Polish	36	9	22	5	5	14	17	6	29	1	26	10	10	25	1	22	14	20	11	5	1	..
Bohemian	31	6	16	9	9	13	9	5	26	..	17	14	17	14	..	10	21	19	10	2	..	..
Swedish	13	2	7	4	..	2	11	9	4	..	13	..	3	10	..	5	8	13	..	..	..	..
Italian	8	4	2	2	2	4	2	1	7	..	5	3	4	4	..	2	5	2	3	3	1	..
Russian Jew	5	..	1	4	..	1	3	1	3	..	5	..	3	1	..	2	3	1	2	2	2	..
Austrian	5	..	4	1	..	1	1	1	1	..	5	..	1	2	..	2	..	2	1	..	4	..
Hungarian	4	1	2	1	1	2	..	..	3	..	4	..	2	1	..	1	2	2	..	2	1	..
Norwegian	4	..	2	2	..	1	3	3	1	..	4	..	1	3	..	1	3	3	..	1	..	..
United States	4	1	1	2	..	..	4	4	..	..	4	..	..	2	1	1	2	3	..	1	2	..
French	2	..	..	2	..	1	1	1	1	..	2	..	2	..	..	..	2	2	..	..	..	..
Danish	2	..	..	2	..	..	2	1	1	..	2	..	1	1	..	1	1	2	..	..	..	..
English	1	1	..	..	..	1	..	1	..	..	1	..	..	1	..	1	..	1	..	..	..	..
Scotch	1	..	1	..	..	..	1	1	..	..	1	..	..	1	..	..	1	1	..	..	..	..
Belgian	1	..	..	1	..	..	1	1	..	..	1	..	1	..	..	..	1	1	..	..	..	..
Unclassified	22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	22
	223	29	94	77	20	54	110	81	103	1	168	29	67	111	6	74	107	138	36	19	26	22

Italians is largely distributed among midwives of other nationalities. There were not more than 20 Italian midwives in all Chicago.

One-half of the number visited had resided in this country 20 years or more; one-quarter from 10 to 20 years, and the remaining number from 1 to 10 years. Ninety-four were between 35 and 50 years of age; 77 were over 50, and 29 were under 35 years.

With regard to their educational qualifications there was practically no illiteracy, only one, a Polish woman, being unable to read or write. Over 50 per cent. could read and write their native languages only; 36 per cent. could read and write English, and 13 per cent. were unable to speak English, the proportion of those unacquainted with English being highest among the Poles, Bohemians and Italians. There were 111 midwives, 50 per cent. of the total number visited, who produced certificates of proficiency from local midwifery schools—(so-called); 67, 30 per cent., held diplomas from foreign schools, and 6, or 2 per cent., were unable to show either certificate or diploma. An ingenious explanation for the lack of a diploma given by one midwife who had previously stated her age as 54 years, was that it had been burned in the Chicago fire of 1871. The sixty-seven who held foreign diplomas may be considered as having been properly trained and as having given evidence of attaining a certain required standard of proficiency before diplomas were granted. The midwifery schools abroad are connected with the universities and a certain educational standard is required of all students entering for the course in midwifery. The instructors are men of the highest standing in the medical profession, so that the theoretical knowledge imparted by them can not be questioned. The practical experience of every student is obtained in the clinics attached to the medical department of the university attended or in the hospitals supported by the government. The length of training is anywhere from six months to two years. The best known schools are those of Naples, Rome, Paris, Berlin, Heidelberg, Prague, Vienna and Stockholm.

The 111 certificates from American schools of midwifery are *prima facie* evidence of but one fact—that the midwife holding such a certificate had the price to pay for it. The same strictures that were applied to the New York schools of midwifery apply with equal force and justice to the Chicago schools. They are veritable diploma mills run for revenue only, usually by some conscienceless physician who receives lucrative returns for a minimum outlay of time and trouble. In the majority of cases, the woman who takes such a course does so in entirely good faith, realizing the necessity for technical knowledge and training and anxious for the necessary practical experience before attempting to practice her chosen profession of midwifery. In all, 25 different styles or forms of American diplomas were exhibited by the various midwives visited. Two were graduates of familiar New York institutions and two claimed St. Louis schools as their alma maters. Many times a local "school" had existed in the back office of some physician, and when he changed his habitat it disappeared from human view; others had gone out of existence and it was impossible to find any trace of them whatever. We succeeded in locating and investigating seven of these so-called schools and colleges of midwifery.

The length of time required to complete the course of study in these schools averages six months; the fees are from $100 to $175. Instructions are given three or four hours each week. In two instances no text-books are required, the physicians in charge claiming that they impart all necessary information by word of mouth. This possibly explains the fact that the Polish woman to whom previous reference has been made as being unable either to read or write, holds a diploma from one of these Chicago schools. When possible, the pupils are afforded opportunities for practical experience, but this is considered by no means necessary. As the state board, which has determined the standard for admission to examination for a midwife's license, requires no practical experience, I see no reason why these instructors of would-be midwives should make any undue effort to obtain or afford opportunities for practical experience to their students. But it does seem inconsistent that it should be deemed necessary for a nurse to spend several months in an operating room in order to learn the technic of surgical cleanliness that she may competently assist a physician, while the midwife can become sufficiently familiar with the principles and methods of modern asepsis after a few hours of oral instruction to be entrusted with the sole responsibility of the life and future well-being of the parturient woman and her child.

And there is another phase to be considered in regard to the knowledge imparted to the inquiring mind that is seeking instruction in these schools. One physician, whose school seems to be well patronized as evidenced by the number of certificates seen bearing his signature, offered for an additional fee to instruct the supposed candidate privately as to the *modus operandi* of successful abortion work, assuring her that it would bring in large returns, that it was a perfectly safe business and that the midwives who were caught were fools. In this particular instance the school of midwifery seems to have been also a school of crime.

To return to the midwife: It was an agreeable surprise to find on the whole a standard of cleanliness for both the homes and persons of the midwives visted much higher than was found among the New York midwives. No more than 19 were absolutely filthy; 36 were fairly clean, and 138, practically two-thirds of the total number, were clean and their homes nicely kept. One explanation for this is to be found in the diffcrent environments of the Chicago midwives. In New York the vast majority of midwives were to be found living in three and four-room tenements, and their standards were comparable with those of the people among whom they live (Table 2). In Chicago nearly all the midwives live in separate houses, with plenty of light and air, and cleanliness is the natural adjunct of their mode of living, not a luxury of attainment. On the North Side, and again on the South Side, where the German midwives were principally found, their living conditions were particularly good. The worst conditions were found among the Poles, Bohemians and Italians from Lake to Twenty-sixth streets.

The majority of midwives visited were not dependent on their practice for a livelihood, the husband or grown children contributing largely to the support of the family. The husbands' occupations were stated variously as laborer, carpenter, barkeeper, baker, cook, boilermaker, tailor, news dealer, teamster, mechanic, machinist, barber, fruit dealer, painter, butcher, laundryman, veterinary surgeon, cabinetmaker, electrician, cigar maker, molder, brewer, blacksmith, clerk, janitor, shoemaker, horse buyer, bricklayer, fireman, tanner, gardener, motorman, valet, policeman, artist, musician, real estate dealer, lawyer and physician. The statement was made by 74 midwives that they were entirely dependent for their support on the income derived from their practice. About three-fourths of the total number visited had been engaged in their practice over 20 years.

Over 10 per cent. of those interviewed expressed an entire willingness to conduct abnormal cases, dilating at length on their ability to perform version, to deliver a breech or transverse presentation, to remove an adherent placenta or to treat a postpartum hemorrhage. All those interviewed, even the dirtiest, claimed that they used antiseptics. One must, however, question the efficacy of the use of an antiseptic by a woman whose person, clothing and bag are filthy beyond description. Filthy bags were found in 11 instances, and the personal uncleanliness of 19 midwives visited has already been noted. Adequate inspection would render the continued existence of such conditions impossible. Such midwives should be considered unfit to practice and their licenses should be revoked.

Coming now to the criminal aspect of the practice of these women, they were found to be practically on a par with their New York sisters. At least one-third should be classified as criminal. The detective succeeded in interviewing all but 15 of the 223. Several attempts were made to see these, but in each instance the woman sought was away from home, and the time allotted for the investigation having expired, the detective was obliged to return to New York without seeing them. It is worthy of note that 14 out of 22 who refused to be interviewed

by the nurse are included in the number of midwives designated as criminal. Four midwives stated that they had been convicted of selling drugs; five, according to the record of the coroner's office, have been indicted for criminal abortion, and two at present are out on bond pending trial. It is significant of their confidence in the final outcome of justice (?) or their faith in the impotency of the criminal law, that they continue their illegal work while their cases are pending. In all, 49 midwives agreed to perform an abortion on the special agent who visited them, and 4 offered to sell drugs that would act as abortifacients. One of the 49, a Norwegian, whose husband is a policeman, was quite the filthiest, and according to current report, is leading a dissolute life. And yet to the nurse who had previously visited her she proudly exhibited her license from the state board to practice the noble art of midwifery. Another woman, whose husband was a physician, refused to operate, but introduced the detective to her husband, who offered for $3 to furnish medicine guaranteed to bring on an abortion.

Midwives to the number of 22 were designated as suspicious either because of information against them furnished by neighbors, or because they exhibited in their possession instruments for which they had no legitimate use. A midwife who has in her equipment a speculum, uterine sounds, dilators, curettes and wired gum catheters, is beyond all question or doubt carrying on a criminal practice. Of these women, 19 offered to receive patients in their homes, a direct violation of the health ordinance which prohibits the conducting of a hospital or lying-in institution of three or more beds without first obtaining a license therefor. As a matter of fact there is very little, if any, obstetrical work done in these houses. Reduced to their simplest terms they are abortion shops, pure and simple. The same epithet would apply equally well to some of the licensed lying-in institutions, so-called. A clever evasion of the law is to be seen in the change of front of one of these institutions, whose license was recently revoked after some peculiarly revolting exposures of its methods and practices. The institution in question is now being run as a "boarding house" and its patients are "boarders."

A great criminologist, Lombroso, classifying certain crimes as local on account of their prevalence in certain localities, refers thus to the practice of abortion in the United States, claiming that so common has this custom become in this country that it is no longer regarded as a crime, rather as a perfectly justifiable, even laudable method of limiting the increase in population. And yet the law recognizes the right of the unborn child to life and to property, and endeavors to safeguard these rights by making criminal abortion a felony.

The statement has been made recently that the number of abortions committed in Chicago is increasing yearly. This is probably true, and it is generally conceded that midwives are the chief agents in procuring these abortions. On the other hand, physicians themselves acknowledge and deplore the presence within their ranks of the criminal practitioner, and there is also a class of druggists who lend themselves to this criminal work. There must also be considered those abortionists who are hiding under the guise of some other profession and style themselves variously clairvoyants, fortune tellers, palmists, masseurs, etc. In addition, the fact must not be overlooked that many abortions are self induced. Contrary to the general opinion, applications for this sort of service come not alone from unfortunate or immoral women, but in the majority of instances from otherwise respectable married women influenced thereto either by selfish motives or because the pressure of economic conditions is so great that the possibility of one more mouth to feed becomes a tragedy to be averted at any cost. We have the testimony of many a poor tenement-house mother to support this last assertion.

Leaving aside the moral, ethical and religious questions involved, and considering only the physical evils resulting from this practice of abortion we know that Nature exacts full payment for every interference with her normal processes. When such interference creates a pathologic condition which renders the patient peculiarly liable to infection we have an added danger the seriousness of which can not be overestimated. Unfortunately, actual statistics of disease and death directly or indirectly traceable to unlawful interference with the natural progress of pregnancy by a careless, criminal midwife can never be written.

Another point to be considered while dwelling on this particular phase of midwifery practice is the collusion between certain midwives and physicians whereby the division of responsibility in the criminal practice results in a divison of the spoils. In the case of a disastrous finale, the cloak of an honorable calling is wide enough to cover and hide from suspicion both the criminal physician and the criminal midwife. Many of these criminal midwives have regular physicians on whom they call for assistance when the results of their interference with Nature point to a fatal termination. Sometimes it is a son who has been educated as a physician. The death certificate is signed by the physician in question and the causes of death assigned may range from pneumonia to cardiac failure. Again the combination may operate in another way—the midwife acting as an intermediary or agent and for a consideration steering her applicant to the physician who is willing thus to prostitute his profession.

Another insidious commercial arrangement is found to exist among certain Italian physicians and midwives, which if not criminal in the ordinary acceptation of the word, is, to say the least, most reprehensible in its exploitation of the unsuspecting patient. The repugnance of the Italian mother to the presence of the physician in the lying-in chamber is well nigh insuperable. Only when she is convinced that her life and the life of her child depend on the immediate aid of a physician will she consent to his being called. Accordingly, although it may be a perfectly normal labor, after a certain period of waiting the midwife may announce that there is an unusual complication with which her skill and experience are unable to cope, and demand that she be allowed to call a physician of once. He comes, makes an instrumental delivery; the patient believes that she has been snatched from the very jaws of death; a maximum fee is charged, and again there is a division of the spoils between the physician and the midwife.

In the last analysis, the state which licenses these women is responsible for the results of their practice. The strongest argument in favor of licensing the practice of the midwife, of affording her legal recognition, is that thereby the state has legal control over her action. No midwife should be allowed to conduct any but normal labors. While the process of normal labor is physiologic, it may at any time become pathologic. If evidence of carelessness, of incompetency, of unlawful practice be adduced, not only should she be punished, but her license should be revoked and her practice should not longer be sanctioned by the state.

State certificates authorizing the practice of midwives in the state of Illinois are issued by the State Board of Health under the provisions of the Medical Practice Act in force July 1, 1899. All applicants are required to furnish evidence of good moral character and to pass a satisfactory examination in the following branches: 1. Anatomy of the pelvis and of the generative organs of woman. 2. Physiology of menstruation and conception. 3. The signs of pregnancy. 4. Mechanism of labor. 5. Management of normal labor. 6. Management of abnormal labor. 7. Puerperal hygiene and antisepsis. 8. Special care of mother and infant.

The applicant if desirous of taking the examination in a foreign language must furnish her own interpreter. In this connection, it is said that a number of Polish midwives holding certificates from the state board have obtained them fraudulently. Having insufficient knowledge to enable them to answer the questions of the board, they employed a clever Polish midwife who was able to speak English. She took the examination successfully in each case and obtained the certificate in the name of the applicant who lacked both the knowledge of English and the knowledge of midwifery.

The state board requires no practical experience from candidates for license to practice midwifery. The committee believes this to be a grave error. Under the English midwives act, 1902, one of the requirements for admission to examination is that the candidate shall produce satisfactory

evidence that she has attended under supervision and watched the progress of not less than 20 labors and that she has nursed 20 lying-in women during the ten days following labor. In New York, under the new law to regulate and restrain the practice of midwifery, the health department is considering the minimum number of 15 cases to be required of the candidate desiring to practice midwifery.

Having obtained her license, the Illinois midwife is free to practice her chosen profession without let or hindrance. Secure in the fact of her legal right to practice, she may become as lax in her methods as she chooses, and by her carelessness or over-confidence, endanger the lives of hundreds of mothers and their babes. So long as she keeps out of the clutches of the criminal law, the authorities ignore her existence, and yet to the ignorant woman who employs her the fact that the state has licensed her practice is proof conclusive that the midwife is entirely competent to take into her keeping the life and safety of the expectant mother. The state has not settled the problem of the midwife by merely examining and licensing her practice. The most important duty still remains, that of the regulation and inspection of the midwife's practice after she has been turned loose, so to speak, on an ignorant and credulous community.

Conclusions of the Committee.

The Illinois law gives the State Board of Health no authority to inspect or to control midwives. This power should be given to the board by legislative enactment. The committee would submit certain suggestions of provisions that would be desirable to secure a proper regulation of midwife practice in Chicago and in the state of Illinois.

The simple device of issuing short-term licenses, to be renewed at stated intervals, and requiring no additional fees after the first granting of the license, would work no hardship on the midwife and would bring her repeatedly to the notice of the proper authorities, thus enabling them to keep a fairly correct record of her name and address; no easy task in the ever-shifting character of our foreign population.

There should be a local representative of the State Board of Health in Chicago, preferably one who might act in conjunction with the local health department, who should be charged with the responsibility of the conditions of midwifery practice in this city. He should have a sufficient number of assistants or inspectors under his control, to carry out the rules established by the board.

The state board should promulgate rules restricting and regulating the practice of all midwives and the local representative should be charged with the responsibility of enforcing these regulations. Rules for the inspection of midwives, of their records, their equipments, their persons, should also be defined. The work of supervision would be greatly facilitated by securing the cooperation of physicians and hospitals to the end that they would make immediate report, on blanks especially prepared and furnished to them for that purpose, of all infected or improperly conducted cases coming under their observation. These blanks should include space for date, name of physician and hospital reporting the case, name and address of patient, date of confinement and name and address of attending midwife. It would be desirable that the midwife should be immediately suspended from practice pending investigation, nor should she be allowed to resume her practice until her equipment and clothes had been properly disinfected under the supervision of the inspector.

With provision for the efficient control of midwife practice very much would be accomplished in correcting the evils that now exist. The committee is well aware of the difficulty in securing first, enactment of such rules and then their execution. In the end the result must depend largely on the status of the midwives themselves. No permanent reform can be secured with uneducated, untrained and vicious midwives. Hence, the committee is forced to the conclusion that provision should be made for the assumption of the control of midwife education by the State Board of Health. This should embrace the recognition of such schools as comply with a specified standard of requirements for admission, equipment and work, as alone entitled to prepare midwives for examination. Such schools should be under the control of the State Board of Health. In instituting a plan of midwife education the board should also provide for repetition courses of from two to four weeks every two or four years, such as are favored by the German and Austrian schools and the German Society for Midwife Reform.

Clinical Notes

LARGE OVARIAN CYST, WITH TORSION OF THE PEDICLE, IN A CHILD.

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A search of the literature shows that this condition is extremely rare. The unusual and peculiar symptoms in this case make it of sufficient interest to report. The history pointed to some obscure bladder trouble.

Patient.—S. B., aged 6, on the night of August 15, was suddenly attacked by pain in the hypogastrium, accompanied by a pressing desire to urinate. She was up constantly during the night trying to empty her bladder. Her mother applied hot fomentations to the meatus urinarius without relief.

Examination.—When seen the following morning the child was in pain and was straining with violent vesical tenesmus. A few drops of normal urine were being constantly expelled. The abdomen was rigid and tender, pulse rapid, and temperature normal. While she was not seriously depressed she presented some slight shock. There was a prominent tumor in the hypogastrium. It occupied the entire pelvis and extended up to the level of the umbilicus. It presented all the physical signs of a distended bladder, except that it was a bit too narrow for its height. There was gut tympany on both sides and above it. It was firmly fixed in position and manipulation intensified the expulsive efforts. Rectal and vaginal examinations were made without positively establishing the diagnosis. The pelvic viscera were so small and so crowded by the cyst that they could not be outlined. All that could be felt was the rounded lower end of the tumor. Catheters were passed into the bladder without result except that they were immediately crowded out by the expulsive efforts which even produced considerable bulging in the perineum. With the exception of chronic enuresis, the child had been in good health till the attack of pain the night before. Her mother always bathed her and had never noticed any prominence of the abdomen. Although it may have no bearing on the case, it may be noted that the patient had always been easily nauseated and would vomit at the sight of her sister eating soft boiled eggs, milk toast, and such articles of diet, which she termed "sloppy." She is a laborer's child and by no means accustomed to delicate or dainty fare.

Operation.—She was prepared without delay and was operated on that afternoon. A large unilocular cyst of the right ovary was found firmly twisted on its pedicle through one complete revolution and a half. The venous circulation was strangulated, with consequent enlargement of the tumor. There were no adhesions.

Description of Growth.—The growth measured 12.5 centimeters in longest diameter, 10.5 centimeters through the center, 34.5 centimeters circumference around the ends, 30 centimeters around the center, and weighed 640 grams. It is now in the Army Medical Museum, Washington, D. C.

Result of Operation.—The patient had an uneventful and rapid recovery. She was up in two weeks and has a perfect result, with almost no scar.

Roentgen Ray in Cancer.—Ennion G. Williams states that much benefit can be expected, even in advanced cases of cancer, by relieving pain, retarding growth and prolonging life. The Roentgen ray, however, is of doubtful value, he asserts, in the treatment of cancers on the mucous membranes, and primary growths of the mammary gland.

EOSINOPHILIA PRODUCED BY POTASSIUM IODID.*

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Eosinophilia, referable to drugs, has been described. von Noorden reports two cases of chlorosis in which there was an eosinophilia of 9 per cent. after the internal administration of camphor. It has been reported as occurring in animals after the inhalation of carbon dioxid. Wood mentions a case in which the cosinophiles reached 14 per cent. in a vesicular eruption brought about by the internal administration of potassium iodid. Boston states that it may follow phosphorus poisoning, and, according to Taylor, after the use of nuclein and pilocarpin. It was noted by us that in patients taking potassium iodid there was a rather high percentage of eosinophiles in the blood.

It occurred to us to try the effect of potassium iodid on the number of eosinophiles normally found in the blood.

METHODS.

In testing the effect of potassium iodid on the blood we selected patients suffering with fractures, contusions, etc. The blood was taken once a day for three days and the eosinophile count for these three days served as a control. In counting the eosinophiles the method of Opie was used. The finger was punctured and a small drop of blood placed on a cover slip, which was at once pressed firmly on a slide. The white cells were counted, including the eosinophiles. The percentage of eosinophiles was then determined. Preparations made in this way will keep for several hours, as the edges of the cover slip become sealed with the dried blood. However, in all our experiments the count was made at once. Generally 200 to 300 white cells were counted. In case there were marked variations in the number of eosinophiles in each 100 white cells counted, four or five hundred were counted.

In some of the experiments a leucocyte count was made. This was done to determine whether potassium iodid has any effect on the number of leucocytes and, therefore, disturbing the relation between the total number of white blood cells and the percentage of eosinophiles. This also showed whether or not we had to do with a leucocytosis at the beginning of the experiments.

* From the Snodgrass Laboratory of the City of St. Louis.

The experiments on the dog were made as follows: The ear of the dog was shaved and cleansed and the blood was obtained by pricking a small vein. The preparation was made in the same manner as in the case of the human subject. A definite amount of potassium iodid was given through a stomach tube three times a day.

RESULTS.

Potassium iodid produces a marked increase in the number of eosinophiles. This increase was constant in all the experiments. However, in experiment No 2, after the first two days, there was a decrease even below the control experiment. In experiment No. 5 there was a similar change as in experiment No. 2. This was due, in all probability, to the sudden development of a leucocytosis. This patient developed a cystitis after beginning the administration of potassium iodid. The increase in the number of eosinophiles during the first two days was constant in all the experiments. In the last two columns of the accompanying table are found the results after the patients had not taken the iodid for three days. This shows, again, as a control, and is practically the same as the control counts made the first three days, before the administration of potassium iodid. The results also show that there is no change in the total leucocyte count of the blood. In some experiments there are suggestions of a decrease, and in others of an increase, but not sufficiently constant to permit of any conclusions.

EOSINOPHILIA PRODUCED BY POTASSIUM IODID.

Experiment Number.	Control; average for 3 days. Percentage of Eosinophiles.	First day. Leucocytes.	First day. Grains of KI.	First day. Eosinophile Percentage.	Second day. Leucocytes.	Second day. Grains of KI.	Second day. Eosinophile Percentage.	Third day. Leucocytes.	Third day. Grains of KI.	Third day. Eosinophile Percentage.	Fourth day. Leucocytes.	Fourth day. Grains of KI.	Fourth day. Eosinophile Percentage.	Control, 3 days with no KI. Percentage.	Leucocytes.
1.	1.1	....	45	7.5	....	45	6	.....	90	12.5	.....	100	10.	1.	....
2.	4.	....	45	11.	....	45	10.	.....	90	4.	.....	100	1.	3.	....
3.	10.5	....	45	13.5	....	45	14.5	.....	90	12.5	.....	100	16.5	6.5	....
4.	4.5	7,900	45	7.5	6,900	75	8.5	6,200	105	7.5	6,900	....	..	2.	8,500
5.	5.5	7,300	45	8.5	13,800	75	7.	12,600	105	3.5	12,800	....	..	2.5	9,500
6.	1.1	6,800	45	3.	6,000	75	3.	6,500	105	7.	7,200	....	..	3.	6,900
7.	4.	7,100	45	5.5	6,100	75	6.5	7,500	105	5.5	8,000	....	..	1.	7,600
8.	4.8	7,200	105	8.5	7,100	105	8.	7,500	105	7.5	7,900	....	..	3.	7,800
9.	1.3	7,500	105	4.	8,000	105	6.5	8,100	105	7.5	7,800	....	..	1.	6,900
10. Dog.	9.	....	30	16.	....	75	15.	....	75	15.	....	....	..	10.	....

Women and Medical Charities in Argentina.—The report of the Sociedad de Beneficencia de la Capital of Buenos Aires for 1907 is a rather notable document, inasmuch as this society, composed of ladies, appears to have general control of a large number of public charitable institutions of that South American city. In fact, it would appear that all the institutions, especially those for women and children, except, of course, the private ones, are under their charge. The enumeration includes the orphan and foundling asylums, male and female, the female side of the national asylum for insane, and one special ophthalmologic hospital and dispensary. In some of these, at least, like the asylum for the insane and the Hospital Rivadivia, the report contains the financial statement as well as the other statistics of movement of population, diseases treated in the different departments, etc., thus showing that the control is apparently more than merely advisory or inspectorial. The total number coming under their care during the year covered by the report numbered over 13,000, and there were remaining at the end of the year in the various institutions 5,616 inmates, of whom 1,922 were males and 3,694 females. The report indicates the existence of a very considerable public spirit and interest in charitable work in the ladies of Buenos Aires and a more than ordinary recognition of the same by the public authorities.

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[*For other information see second page following reading matter.*]

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SPONTANEOUS GENERATION AGAIN.

In spite of all the scientific demonstrations to the contrary, every now and then one reads articles that suggest the possibility of spontaneous generation of life, and, at least apparently claim its occurrence. Not infrequently, such claims are made even by scientists, though rarely by scientists who are trained biologists. As all our sanitation and practically all our modern medicine in its most scientific phases are founded on the thesis that life does not originate spontaneously, and as such articles are prone to produce popular impression to the contrary, the restatement of medical views in this matter occasionally seems necessary. Mr. Percival Lowell, the director of the Lowell Observatory, in one of a series of articles in the *Century Magazine,* insists emphatically that whenever the conditions for the existence of life occur the lower forms of life at least come into existence. "Virtually," he says, "only six so-called elements go to make up the molecule of life. It is the number of its constitutent atoms and the intricacy of their binding together that give it the instability to produce the vital actions. Carbon, hydrogen, oxygen, nitrogen, phosphorus and sulphur are all that are required. If a planet be capable of furnishing these under suitable conditions it seems as inevitable that life will ensue as that the two elements sodium and chlorin will unite to form common salt when the heat and pressure are right."

As we have said, modern medicine is founded on the direct contradiction of such a proposition as this. We are assured that life, even in its lowest forms, never occurs except as a derivative of preceding life. When we find a case of typhoid fever we do not consider for a moment the possibility of certain conditions necessary for the production of a living typhoid germ having been present, but we look for the preceding case of typhoid from which the infectious material came. The same thing is true for all the other infectious diseases. No authority in bacteriology thinks for a moment that any infectious disease originates anew, no matter what favoring conditions for such origination apparently have been present. It is because of this principle of living germs arising only from preceding living germs that we harbor the hope of eradicating infectious disease. We confidently expect that tuberculosis will be reduced in its mortality quite as leprosy is, though that disease was as widespread in the middle ages as tuberculosis is now. If there were any question of the origin of these diseases under favoring conditions, except from a previous germ, then we could not legitimately have any such expectation.

Not only is this true in bacteriology, but it constitutes the basic principle of pathology, and is there even more strikingly displayed. Not only does no living thing, however low in the scale, originate except from preceding life, but no portion of any living thing comes into being, except from a living particle of the organism of which it is to form a part. The foundation of cellular pathology, as laid down by Virchow, is that every cell comes from a preceding cell. No germinative power in any fluid in the body, no matter how powerful it may seem or how important, is capable of producing a living cell. Any popularization of science real or supposed that tends to weaken this conviction of the impossibility of the origin of life or of any portion of any living thing except from preceding life strikes directly at the principles by which physicians have brought about the great reduction in disease, and have lessened human suffering and increased the length of life.

Nearly every generation sees a definite attempt made to undermine the force of the fundamental proposition of biology that spontaneous generation does not occur. In spite of the supposed popular knowledge with regard to medicine there is a general impression among non-medical people that certain low forms of life do originate anew. For this there is not only no evidence, but there is abundant evidence of the contrary. The application of the principles that contradict this false popular impression are the most practically fruitful discoveries in science for the happiness of mankind that have ever been made. It is well then to emphasize them once more so that there may be a more general appreciation of what the basis of bacteriology and pathology really is.

TWO KINDS OF WEALTH.

A few days ago a famous American surgeon told a friend that it was a constant mortification to him that for his life-work he had not chosen business rather than medicine; and yet the annual income of this particular surgeon from practice is perhaps $100,000. Also a few days ago at the testimonial dinner to Robert Koch in New York City, a layman, Andrew Carnegie, who has gathered, who has given away, and who still has left more money than any other one individual, said that he would give all his worldly wealth for the immaterial wealth of many of the physicians there before him. It is distressingly evident that there is a vast difference between the standards of life of these two men. Their judgments seem irreconcilable. The famous surgeon's success and income for one year would more than satisfy many of us impecunious strugglers for a life-

time, and that of Carnegie would give the profession an almost immediate victory over most diseases—a hoped-for victory that is the ideal, the heart of the faith of every worthy physician. Is there no possible reconciliation of the two points of view? What is the truth, and what the falsity of each position, which make them so ludicrously and yet so sadly antagonistic? Why does the surgeon with the income of a prince, but not of a Carnegie, hunger for the millions, while the industrial Crœsus would gladly give all his many millions for the medical man's mind and vocation? If they make the trade, they must soon needs logically trade back again.

The answer to the riddle is really not hard to find. On the surgeon's part, it comes to view at once. He practices medicine for any and every reason but the right one. He values money at more than its worth. Already he has a larger income than he may wisely or beneficently spend; what a mess of it he would consequently make if he had the millions! As all old legends have it, in gambling with the devil, the stakes are Success against Soul. To the sensible, money is of use only in helping to get the few good things which money alone can not buy! The envying surgeon and his like suppose that checks can buy what is unpurchasable. The farce of this sorry company is to buy goods which can not be delivered. They are steering straight for eventual psychic and moral bankruptcy.

Robert Louis Stevenson, seeing the life of the medical man only from without, wrote these memorable words: "The physician is the flower (such as it is) of our civilization; and when that stage of man is done with, and only remembered to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race." Such a tribute to the honor, valor and value of our profession gives those of its members who are faithful a livelier encouraging. In the larger sense it is true, and it is deserved. But every one of us, whether we resist, half yield, or are borne down by the pressing evil, must feel better and stronger by reason of Carnegie's magnificently frank outburst. His money, he confessed, was a poor substitute for the beneficent science of an intelligent and unselfish medical man. The young Carnegie's heart had always been in the work of the physician and humanitarian, but at the time of life when most men embark on their careers of scientific study, the distressing poverty of his family made an immediate start in a commercial career imperative; as he so pathetically put it—"all other thoughts were overwhelmed by the stern resolve to drive the wolf from his parents' door or die in the attempt."

When we think of the intolerable vogue of charlatanry, of the greed of patients, of the dragging weariness of our overwork, of our often pitiless poverty, of our unprovided for families, of the oncoming hopeless old age, we too may at times envy the rewards of those who chose not medicine but the success and fame of the commercial life and with efforts almost superhuman, right or wrong, forge to a first place in the world of finance.

With the most evident sincerity, the most successful and the most unselfish of all millionaires, standing before physicians, says that ours is the preferable lot, the real success, the saner life. What a splendid acknowledgment of the utter failure of the gospel of getting! What a commentary on the old text concerning the gaining of the whole world and the losing of one's own soul! What an illustration of the obvious fact that at least this one speaker has not lost his own soul! Above all, what a benediction on the life and faith of the genuine physician!

THE MIDWIFE.

We had occasion about a year ago to review an admirable piece of research made in the field of public health and morals by F. Elizabeth Crowell,[1] who investigated 500 of the midwives of New York City with special reference to their training, methods, and criminal work. The present number of THE JOURNAL[2] contains the report of a similar investigation of the midwives of Chicago, which was carried on last summer under the supervision of Miss Crowell. The report is of great value to the people of Chicago and the city owes a debt of gratitude to the Chicago Medical Society and Hull House, under whose auspices the investigation was made, for presenting clearly and forcibly a situation which calls for instant amelioration. We are told that the Chicago Medical Society was prompted to enter on the investigation because of the evidence of criminal practices by midwives acquired by its Committee on Criminal Abortion, while Hull House became interested in the question through observing the appalling frequency of deaths in childbirth among the women in certain foreign sections of the city. Both these aspects, the danger to the life of the mother in the hands of an ignorant midwife, and the criminal practice of these women, are taken up in the present report, and the conditions which make the former frequent and the latter easily possible, are clearly set forth.

It will be a surprise to many physicians to find how much obstetric work is done by midwives. Chicago has several large Italian colonies. The Italians are among the most prolific of peoples, and 86 per cent. of their births are reported by midwives. The numbers are only slightly lower in the Slavic colonies.

While many of the midwives visited were intelligent, clean and competent, the investigators found numerous instances of deplorably inadequate training joined to a readiness to assume charge of abnormal cases and to perform abortion. It is needless to lay stress on the danger to the community which such women constitute.

1. THE JOURNAL, Feb. 23, 1907, p. 712.
2. Page 1346.

It is gratifying to note that the conditions as to illiteracy and as to filthiness of home and person, are decidedly better in Chicago than they were found to be in New York. As to the actual competency of the midwives, however, Miss Crowell's report does not allow Chicago much cause for congratulation. In New York 40 per cent. of the midwives hold foreign diplomas and are probably well trained in their profession; in Chicago only 30 per cent. hold such diplomas; the others have certificates from private physicians or diplomas from local schools.

The committee finds that the authority of the Illinois State Board of Health over the midwives of Chicago is entirely inadequate. The law of Illinois gives to the State Board of Health no authority of inspection, or power to revoke a license for malpractice, so that its function is practically limited to the holding of examinations and granting of licenses. At the same time it is evident that the Illinois State Board of Health has neither used to the full extent the powers given it by the state nor made any apparent effort to increase these powers. There is no reason why the board should not insist on certain preliminary educational qualifications for candidates for license to practice midwifery. Nor is it easy to understand why it has not long since insisted on these candidates presenting satisfactory proof of practical experience in obstetrics before obtaining their licenses. If the board is not authorized under the present law to make these demands, it would seem to be a matter of little difficulty to obtain an enlargement of its powers. That the board considers its relation to the midwife closed after the granting of the license is clearly seen in the fact that no effort is made even to ascertain the number of midwives practicing at the present time. Miss Crowell found the registry worthless, only 9 per cent. of the midwives visited being correctly registered.

These reforms and others are advocated by the committee at the conclusion of the report. They would undoubtedly go far toward controlling this heretofore outlawed branch of the medical profession. Many will no doubt be startled at the suggestion that the state should assume control of the schools of midwifery yet this is the only logical course to take. The standard of medical training required by the state of Illinois and by most of our states is being raised continually, and it is altogether inconsistent that the standard of training of midwives should make no advance. Since the state must license these women let us at least see to it that the license means something. With state supervision of schools and proper inspection of midwives we might hope to have these obstetricians of our foreign colonies reach as high a level of efficiency here as they are obliged to in Europe.

THE CARROLL-LAZEAR PENSION BILL.

The bill providing a pension of $125 monthly each to the widows of Drs. James Carroll and Jesse W. Lazear has passed the Senate and is now in the hands of the House committee on pensions. It is most gratifying to note the sentiments expressed by members of the Senate in the short debate which took place on this bill. Senator McCumber, in presenting it to the Senate, stated that Congress had already established a precedent in granting a similar pension to the widow of Major Walter Reed and that, as Drs. Carroll and Lazear deserved equal credit for the part they took in the investigation of the cause of yellow fever, justice required that a similar pension be given to their widows. Senator McCreary said: "A man who charges a battery exposes his own life and shows that he is a patriot by fighting for his country. But this great discovery is beneficial to thousands, almost hundreds of thousands of persons and the man or men who exposed their lives for the purpose of benefiting so many hundreds of thousands of their fellow men, I think, deserve great credit." Senator Gallinger said: "The soldier in his performance of his duty charges the battery and loses his life in doing a patriotic act. These two physicians held commissions in the medical department of the army and their duty ceased when they performed the ordinary duties which are required of surgeons in the army. In performing this added service, making themselves subject to death as the result of these experiments, they went outside and beyond what could reasonably have been demanded of them, and lost their lives as the result."

The bill passed the Senate unanimously and it is hoped that it will be accorded the same treatment in the House. The public, particularly in the southern states, is only beginning to recognize the debt which this country owes to those devoted physicians who, at the risk of their own lives, demonstrated the cause and method of transmission of yellow fever. Viewed solely from a commercial standpoint, the annual saving to the south in quarantine expenses alone will be so great as to make the amount of the pensions granted the widows of these men seem infinitesimal. Viewed from a practical standpoint, their work was of the highest value, while as a gift to humanity it is inestimable. The action of the Senate in thus recognizing the claims which Drs. Carroll and Lazear have on the American people can not fail to receive public approval and approbation.

THE FALLACY OF SECTARIAN BOARDS.

At a hearing before a legislative committee recently held in a neighboring state, the following argument is reported to have been made by one of the advocates of a bill to establish a separate board of examiners for one of the numerous cults at present attempting to invade the field of medical practice: "The regular medical profession has its own board of examiners and we have as much right to a board as physicians have." This statement is repeatedly made before legislative committees as an argument in favor of sectarian boards and, strange to say, it appeals to the average legislator as being a valid and reasonable argument. Only a slight acquaintance with the fundamental principles of the law relating to the control of the practice of medicine is necessary for detecting the fallacy of this argument. The mistake lies in the assumption that a board of med-

ical examiners, because it is composed of legally qualified physicians, is the representative of or the champion of the medical profession. There would be as much reason in assuming that the state supreme court was the special representative of the legal profession. The control and regulation of the practice of medicine, like that of any other calling, comes under the police powers of the state. Boards of medical examiners are created, not for the benefit of the medical profession, but for the purpose of safeguarding the lives and health of the people. These boards, therefore, are specially constituted bodies to which the state has delegated the duty of passing on the qualifications of those who wish to treat human diseases. In the exercise of this function they represent the people of the state and not a portion of them. For each of the innumerable sects and cults to demand a separate board of examiners, as though by some inherent right, is as ridiculous and illogical as it would be for a small body of citizens in some state to appear before the legislature and say, "We do not believe in law, the courts of the state represent the lawyers and we therefore demand the right to establish courts of our own."

MEDICAL NOMENCLATURE.

There are, perhaps, few subjects so worthy of careful consideration, yet regarded with such cavalier indifference, as the value of the names manufactured from time to time by innumerable writers to escape a periphrasis. We are not now referring to a lack of philologic knowledge in the mere ignoring of purely technical rules of word formation, though that is bad enough, forcing into the vocabulary words that make one with a moderate knowledge of the science of language shudder, yet which when they become current coin of speech must be accepted. The artist does not refuse to accept a bank bill because its design is hopelessly devoid of artistic feeling, but it may be permitted him to sigh over and protest against it, and above all to use any influence he may possess to secure greater artistic merit for new bills when they shall be issued. We refer here, however, to the recent introduction of the word colicystitis, meaning, of course, cystitis due to the colon bacillus. Its phonetic resemblance to cholecystitis may render it a source of constant confusion. True, the context, when arrived at, will make clear the meaning, but the less any word, more particularly a technical term, has to depend on the context for the conveyance of the idea, the better. It is somewhat longer, it is true, but surely "*Bacillus coli* cystitis" or "colibacillary cystitis" would pay better in the end, by saving from the retracing of false steps more time than is lost in getting under way.

THE RESEARCH DEFENSE SOCIETY.

This is the name of a society that took its rise in the committee formed in Great Britain by the various scientific and medical societies, on the appointment of the Royal Commission on Experiments on Animals, to ensure the adequate and orderly presentation of evidence as to the value of, and necessity for, such experiments. With the termination of the evidence the original purpose of the committee was accomplished, but it appeared that a very useful function might be fulfilled by the perpetuation of the committee as an independent body with the object of spreading information by means of publications, lectures, etc., among the general public, so that the distorted views hitherto disseminated by the antivivisection societies without opposition, might be counteracted. Accordingly, on January 27, 1908, the Research Defense Society was organized. The list of members up to March 6 was 429, exclusive of the president, the Earl of Cromer, and thirty-three vice-presidents, among whom, in addition to the regius professors of Oxford and Cambridge and other notable physicians and physiologists, are found many distinguished laymen and clergymen. The response that the society has met with is very gratifying, and augurs well for the protection of the rights of biology as an experimental science.

UNDERGRADUATE MEDICAL ASSOCIATION.

In the formation of the Undergraduate Medical Association of the University of Pennsylvania, an account of the first annual meeting of which appears in our correspondence columns this week, the undergraduates of that university have set a pace which should put not only the undergraduates of other universities, but the graduate associations also, on their mettle. Such an undertaking brings the undergraduate element into closer touch with the graduate and professorial element. The character of the papers, also, should lead to the acquisition of breadth of view, thus tending to minimize the evil of the almost inevitable minuteness begotten of working with an eye always on the examination. Yet, that breadth of view, so far from being an impediment to examination success, must prove of distinct advantage to the immediate prospect of the student, by harmonizing and welding knowledge. We can imagine no more potent factor for increasing the real efficiency of medical education than such a society.

Medical News

ALABAMA.

Commencement Exercises.—At the fourteenth annual commencement exercises of the Birmingham Medical College, April 3, a class of twenty was graduated. The address of the evening was given by President C. C. Thach, of the Alabama Polytechnic Institute.

Smallpox.—The number of cases in Montgomery is said to be gradually decreasing. Twelve patients were recently discharged from the Emergency Hospital and three new patients entered the hospital.——During March there were 17 cases in the Madison County Isolation Hospital, Huntsville, and 7 patients remained there at the end of the month.——In one house in Birmingham 13 cases of smallpox were found on March 25.——It is said that at least 50,000 vaccinations have been made within the city limits of Birmingham.

Personal.—Dr. Edward J. Conyngton has been elected health officer of Decatur.——Dr. Harris P. Dawson, Montgomery, has been elected interne at the Charity Hospital, New Orleans.——The following summer staff is announced at the Mobile City Hospital: Surgical—Drs. William McD. Mastin, William T. Henderson and George E. Gavin; assistants, Drs. Douglas G. Campbell, Parker J. Glass and Joseph Schwartz. Medical—Drs. Neal E. Sellers, Ernest S. Feagin, Nicholas A. Madler and

Lee W. Roe. Obstetrical—Dr. Joseph Schwartz. Eye, ear, nose and throat—Drs. Rufus A. and A. E. Wright, Maumenee. Dermatology—Dr. M. Toulmin, Gaines, and county surgeon, Dr. William G. Ward.

CALIFORNIA.

Senior Student Killed.—Selwyn Emmet Graves, a senior student of College of Medicine of the University of Southern California, Los Angeles, was killed recently by a freight train while crossing the Southern Pacific tracks in Los Angeles.

State Medical Board Election.—The following officers of the State Board of Medical Examiners have been elected: President, Dr. J. Park Dougall, Los Angeles; vice-president, Dr. George F. Reinhardt, Berkeley; secretary, Dr. Charles L. Tisdale, Alameda, and treasurer, Ernest Sisson, an osteopath of Oakland.

College Merger.—A final agreement has been reached in the matter of affiliation of Cooper Medical College with Stanford University. The only stipulation insisted on by the authorities of the college was that the study of medicine shall be forever pursued in San Francisco and that all trusts left by Dr. Levi C. Lane are to be fulfilled.

Campaign of Sanitation.—The board of health of San José has directed that 10,000 copies of the report of health conditions made by Dr. William Simpson and adopted by the sanitary board of San Francisco, be printed and circulated throughout the city and that 1,000 copies of the report be printed in Italian and the same number in Portuguese.

Epidemic Diseases.—There are reported to be 36 cases of chickenpox in Ontario and the opening of schools and other places of public gathering has been interdicted.——The grammar school and high school of Redding have been ordered closed on account of the prevalence of diphtheria.——Diphtheria, thus far of mild type, is reported in Yuba and Sutter counties.——Vallejo reports 7 cases of smallpox.

Personal.—Dr. Bradford Woodbridge, Rocklin, has been appointed surgeon of the Southern Pacific Railroad, in charge of the branch hospital at Roseville.——Drs. Frederick W. D'Evelyn and Ernest M. Keys, members of the board of health of Alameda, have resigned.——Dr. Sylvan Haas, Grass Valley, has been appointed pathologist of the Lakeside Hospital, Cleveland, Ohio.——Dr. Edward R. Sill, president of the board of health of Oakland, has resigned and will make a tour of Europe. Dr. Charles A. Dukes has been appointed to fill the vacancy. Dr. Dukes has recently been commissioned major-surgeon of the Fifth Infantry, C. N. G.——Dr. Carl R. Krone and Hon. Henry A. Melvin will deliver a special course of fifteen free lectures on medical laws at the lecture hall of the Oakland College of Medicine and Surgery.——Dr. G. W. Ogden, fifth assistant physician at the Napa State Hospital, has been reinstated.——Dr. J. Emmet Clark has been reinstated as president of the board of health of Alameda.——Dr. Hiram B. Tebbetts has been elected assistant health officer of Los Angeles, vice Dr. Harris Garcelon, resigned.——Dr. and Mrs. Reuben M. Bonar, Santa Rosa, have returned after an extended trip in the East.——Dr. Clifford L. De Vinny, Stockton, is convalescent, after a recent serious operation on the kidney.——Dr. William H. Keck, Santa Cruz, was shot in the neck by an insane patient April 6.——Dr. Arthur C. Smith, Oakland, was operated on for appendicitis March 23.——Dr. Thomas J. Cox, Sacramento, was operated on for appendicitis March 16.

DISTRICT OF COLUMBIA.

Personal.—Dr. Percy G. Smith has been selected by the commissioners to take charge of the new Tuberculosis Hospital of the district, on Brightwood Avenue.——Dr. Lewis Chapero, for some time resident surgeon at the Casualty Hospital, has resigned, and sails for Manila in the U. S. P. H. and M.-H. Service, April 25.

Smallpox.—In the case against Enoch Washington, charged with running an unlicensed bar, the case was continued indefinitely March 29, because nearly all the witnesses had been sent to the Isolation Hospital as smallpox suspects.——On March 30, 11 cases of smallpox were reported, all the patients being negroes.——An inspector in the service of the health department was discovered to have contracted smallpox April 2 and was taken to the Isolation Hospital.

To Amend Drugs and Poison Law.—On account of the increased consumption of cocain and other drugs in the district, the commissioners have forwarded a draft of a bill to amend a section of the drugs and poison law. The amendment provides "that it shall be unlawful for any person other than a registered druggist, physician, dentist or veterinarian while pursuing his respective profession to have in his possession, except as heretofore provided, any substance or preparation of cocain, morphin or laudanum except on a prescription of a physician, and then only when the same is enclosed in a bottle or other package bearing the name of the physician prescribing the same and the name of the person for whom it is prescribed."

FLORIDA.

State Board and Hydrophobia.—The State Board of Health has made arrangements whereby the Pasteur treatment for hydrophobia can be given without sending the patient away from the state for treatment.

State Association Meeting.—At the thirty-fifth annual meeting of the Florida Medical Association, held in Ocala, April 15-17, the following officers were elected: Dr. James F. McKinstrey, Jr., Gainesville, president; Drs. James Dr. Love, Jacksonville, and William H. Powers, Ocala, vice-presidents; Dr. J. D. Fernandez, Jacksonville, secretary-treasurer (re-elected); Dr. Charles E. Terry, Jacksonville, librarian (re-elected), and Dr. J. Harris Pierpont, Pensacola, delegate to the American Medical Association.

GEORGIA.

Free Antitoxin.—The State Board of Health announces through its secretary, Dr. Henry F. Harris, Atlanta, that on or about March 15, the board will begin the manufacture of diphtheria antitoxin for free distribution to patients throughout the state.

Reorganization of Journal Staff.—The reorganization of the editorial staff of the *Atlanta Journal-Record of Medicine* is as follows: Dr. Edgar G. Ballenger, editor; Dr. Bernard Wolff, supervising editor; Drs. Alexander W. Stirling and John S. Hurt, associate editors, and 13 collaborators.

Dinner to Graduating Class.—The faculty of the Atlanta School of Medicine gave a dinner to the graduating class of the school at the Piedmont Hotel, April 4. The annual commencement exercises were held April 22, when a class of 56 was graduated, and Dr. John C. Olmstead delivered the annual address.

Change in City Physician.—An ordinance has been introduced in the Atlanta city council providing that the force of city physicians shall consist of three, to be elected by the board of health. They are to serve three years and to be paid $2,000 or $2,400 a year, and shall be required to give their entire time and attention to the care of the indigent sick of the city.

ILLINOIS.

Sanitarium Incorporated.—The Resthaven Sanitarium has been incorporated at Elgin by Drs. George F. Washburne, Elgin, and Richard N. Foster, Chicago, with a capital of $35,000.

Society Elections.—At the annual meeting of the East St. Louis Medical Society, April 13, Dr. Ato C. Housh was elected president; Dr. Charles S. Skaggs, vice-president; Dr. Henry A. Cables, secretary, and Drs. Carl A. W. Zimmermann, Henry Hanson and William S. Wiatt were elected censors.

Personal.—Dr. Ralph E. Niedringhaus, Granite City, is seriously ill with typhoid fever at the home of his father-in-law in St. Louis.——Dr. H. R. Marsh, La Hogue, has returned to Alaska as a medical missionary.——Dr. William B. Peck, Freeport, coroner of Stephenson County, has started for Europe, and Dr. Moses M. Baumgartner has been appointed deputy coroner during his absence.

Communicable Diseases.—Dr. Levi J. Rhea, health officer of La Harpe, states that scarlet fever and not smallpox has been prevalent in La Harpe as announced in THE JOURNAL of April 18. Since March 30 only one case of scarlet fever has been reported and this gives no cause for alarm. All the cases have been of mild type and the total number does not exceed 35. ——Whooping cough is reported to be epidemic in Cortland. ——The Oak Street school, Elgin, was closed April 10 on account of smallpox.

Chicago.

Personal.—Dr. and Mrs. Casey A. Wood, who have been making a trip to Egypt, returned April 20.——Dr. and Mrs. Arthur R. Reynolds are expected to return from Europe this week.——Dr. and Mrs William M. Harsha and Dr. and Mrs. Daniel R. Brower have returned from California.

Abortionist Sentenced.—Mrs. Lucy Hagenow, said to be the most notorious abortionist of Chicago, who was brought to justice through the efforts of the legal committee of the Chicago Medical Society headed by Dr Rudolph W. Holmes,

was sentenced on April 18 to imprisonment in the penitentiary for 18 years for having caused the death of Anna Horvatich, May 6, 1907, through an illegal operation.

The Week's Mortality.—During the week ended April 18, 627 deaths were reported from all causes, equivalent to an annual mortality of 15.09 per 1,000. Pneumonia caused 106 deaths; consumption, 78; acute intestinal diseases, 46; heart disease and violence (including suicide), each 44; nephritis, 34; cancer, 32; pneumonia, 29; diphtheria and measles, each 7; scarlet fever, 5; typhoid fever, 4, and whooping cough, 3. The deaths from pneumonia and consumption make up nearly 30 per cent. of the total deaths of the week.

The Contagious Disease Situation.—During the week ended April 18, 551 cases of communicable diseases were reported, 58 fewer than for the preceding week. These were distributed as follows: Diphtheria, 49; scarlet fever, 17; measles, 284; chickenpox, 27; typhoid fever, 29; whooping cough, 26; tuberculosis, 59, and minor diseases, 6. As compared with the corresponding period of last year, there were 21 fewer cases of diphtheria, 54 fewer cases of scarlet fever and one less of smallpox. No smallpox cases were found during the week, but 10 patients remained in the Isolation Hospital.

INDIANA.

Illegal Practitioner Fined.—George B. McClellan, an alleged "Indian Doctor," known as "Diamond Dick," an itinerant medicine vendor, was found guilty of practicing medicine without a license at Marion, and fined $25 and costs. He is said to have left for Chicago.

Personal.—Dr. Nelson D. Brayton, on duty at the Ancon Hospital, Panama, visited his parents, Dr. and Mrs. Alembert W. Brayton, Indianapolis, during March and April. Dr. Brayton expects soon to resume practice in Indianapolis.——Dr. Fred W. Terflinger has been made acting medical superintendent of the Northern Indiana Hospital for the Insane, Longcliff, Logansport, vice Dr. Joseph G. Rogers, deceased.——Dr. Edwin O. Harrold has succeeded Dr. Otis W. McQuown as health officer of Marion.——Dr. Warren R. King, Greenfield, has been appointed surgeon of the State Soldiers' Home, Lafayette, vice Samuel R. Cunningham. Dr. George W. Lee, Greenfield, assistant surgeon of the Third Infantry, Ind. N. G., has been made assistant surgeon at the home.——Dr. Sidney J. Vichel, Evansville, who has been seriously ill with angina pectoris, is reported to be improving.

IOWA.

Personal.—Dr. A. L. Wright, Carroll, member of the Board of Trustees of the American Medical Association, who has been seriously ill with appendicitis, has recovered sufficiently to be about.

Prevalent Diseases.—Dubuque seems to have had an unusually large number of cases of acute mastoiditis the past winter.——There are many cases of scarlet fever near Glenwood, all supposed to have originated in the Williams school, which has since been closed.——There is less smallpox and scarlet fever at Spencer and the schools have been reopened.——For a month cases of spinal meningitis have been appearing at Harlan. There were a number of deaths from this disease last year in this locality.——Smallpox is reported from many points throughout the state. At Iowa City one of the schools has been closed.

MARYLAND.

Smallpox.—There are said to be 7 cases of smallpox among negroes in Montgomery County, near the District of Columbia line.

Personal.—Dr. Henry Barton Jacobs, Baltimore, and Dr. Guy Steele, Cambridge, have been reappointed members of the tuberculosis sanatorium commission.——Dr. Samuel Clagget, Petersville, has been appointed local surgeon for the Baltimore & Ohio Railroad.

Antispitting Bill.—The antispitting bill drafted by the attorney general, after conference with the president of the State Tuberculosis Commission, the health commissioner of Baltimore, the secretary of the State Board of Health and the secretary of the State Tuberculosis Commission, was recently introduced in the senate. The bill prohibits spitting in any public conveyance or public building.

Reduce Hospital Appropriations.—The governor has signed the indigent insane bill, which requires the state to take charge of all indigent insane within our borders in 1911. He has cut out many items in the appropriation bills recently passed, by which he claims to have saved more than $400,000 to the state. The reductions are in the appropriations for buildings and not in those for maintenance of institutions. The Medical and Chirurgical Faculty, which asked for $100,000 for a library building and which was allowed $25,000, received only $12,500. The Eudowood Hospital for Consumptives is allowed $5,000 instead of $10,000 for building, but this reduction will not prevent the institution from getting the $25,000 conditionally offered by Mr. Bloede. The Annapolis Emergency Hospital will receive $25,000, the University Hospital $25,000, the Peninsular General Hospital $7,500, and the Franklin Square Hospital $25,000, or just one-half the amount asked for.

Baltimore.

Epidemic.—An epidemic of German measles has been prevalent in the city. During the week ended March 28, 142 cases and 50 cases of scarlet fever were reported.

Memorial for Dr. Trimble.—A movement has been started to erect a suitable memorial to the late Dr. Isaac Ridgeway Trimble. The committee in charge includes the following physicians: Drs. L. McLane Tiffany, Hiram Woods, Frank Martin, William S. Thayer, Charles O'Donivan, John S. Davis and John Ruhräh.

Herter Lectures.—The fourth course of lectures on the Herter Foundation will be delivered by Prof. Edward A. Schaefer, professor of physiology in the University of Edinburgh, April 27, 28, 29 and 30, at 4:45 p. m., at the Physiological Building, Washington and Monument streets. The general subject will be "The Pituitary Body."

Accidents and Injuries.—During March there were reported in the city 227 accidents, with 21 deaths, as follows: 15 persons were bitten by dogs, 27 were hurt by vehicles and 52 were injured in street-car accidents. Of the 21 deaths, 3 died from burns, 2 from drowning, 2 from accidental poisoning, 4 from gas asphyxiation and 2 from street-car and 2 from steam-car accidents.

Personal.—It is announced that at the annual convocation of Queen's University, Kingston, Ont., the degree of LL.D. will be conferred on Dr. Lewellys F. Barker.——Dr. A. H. Koelker has been appointed assistant in physiologic chemistry at Johns Hopkins University.——Dr. John R. E. Eyster, associate professor of physiology, Johns Hopkins Medical School, has been elected professor of pharmacology and materia medica at the University of Virginia.——Dr. William F. Lockwood, who has been seriously ill with diphtheria, has recovered and will resume practice.——Dr. Roland B. Whitridge will spend the summer in Italy and France.——Dr. John C. Hemmeter of the University of Maryland has been elected an honorary member of the Royal Society of Internal Medicine, Berlin.

NEW JERSEY.

Change in State Society Meeting.—The secretary of the Medical Society of New Jersey announces that the next meeting will be held in Cape May on Thursday, Friday and Saturday, June 18, 19 and 20, instead of June 25, 26 and 27, as previously announced.

Communicable Diseases.—Measles is said to be again epidemic in Edgewater Park.——Typhoid fever is still prevalent in Trenton, where 20 new cases and 5 deaths were reported in the first week of the month.——Measles and chickenpox are said to be prevalent at Woodstown.——Measles is reported to be epidemic in Columbus.

Personal.—Dr. John A. Beek, Gloucester, is reported to be seriously ill with typhoid fever.——Dr. Elisha C. Chew, city physician of Atlantic City, narrowly escaped being run down in his automobile by a Pennsylvania train at a grade crossing, March 28.——Dr. Duncan W. Blake, Gloucester, has announced his retirement from active practice, and has moved to Seaville.

Vital Statistics.—There were reported to the Board of Health 3,268 deaths for the month ended March 15. Of these 392 were due to pneumonia, a decrease of 124 from the previous month; 265 were caused by diseases of the respiratory system, pneumonia and tuberculosis excepted; 344 were from tuberculosis; 402 from diseases of the circulatory system; 407 from diseases of the nervous system; 223 from nephritis; 130 from cancer, and 46 from suicide.

NEW YORK.

Personal.—Dr. Willis G. MacDonald of Albany has been appointed manager of the State Hospital for the Treatment of Incipient Tuberculosis.——Dr. Reuben Ottenberg, New York City, has been awarded the George Blumenthal, Jr., fellowship in pathology at Mount Sinai Hospital for the coming year.——Dr. Lester W. Bellows has succeeded Dr. William W. Carleton as health officer of Waterloo.——Dr. Richard Mills Pierce, Jr., Albany, has been appointed professor of pathology and director

of the laboratory of pathology of the University and Bellevue Hospital Medical College, New York City.——Dr. William P. Spratling has returned to his work at the Craig Colony for Epileptics, Sonyea, after spending several months with his family in Bermuda.

For Those Threatened with Insanity.—A ward specially designed for the treatment of those who fear that they are threatened with insanity is being built at the Hudson River State Hospital, and will be opened in a few weeks. It is the plan of the management to accept voluntary applications for treatment. This psychopathic building will have accommodations for about 80 patients. There will also be a free clinic in connection. The treatment of incipient insanity has been successfully tried in Germany and will be attempted at Binghamton State Hospital this year, and the following year will be extended to the state hospitals at Middletown and Utica. The patients will not be regularly committed and there will be no records of insanity to annoy them or their heirs.

New York City.

Measles Epidemic in Brooklyn.—Dr. Reaver R. Maxwell, health officer of Brooklyn, says that there are now more cases of measles among the children of Brooklyn than at any time since the winter of 1898-1899. It is said that at present there are about 3,000 children under quarantine.

Medical College Increases Requirements.—The College of Physicians and Surgeons, Columbia University, New York City, two years from this fall will require new conditions for entrance. Two full years of study in a college or scientific school, or its equivalent, will be asked, and this must include instruction in the elements of physics, inorganic chemistry and biology.

Sewage in New York Bay a Menace.—Dr. Daniel Lewis, former state commissioner of health, says that the sanitary protection of New York is menaced by the dumping of millions of gallons of sewage daily into New York Bay, and the Hudson and East rivers. It is estimated that not less than 505,000,000 gallons of sewage are dumped into the harbor of New York each day. Because of the peculiar currents and tides, the sewage is not carried out to sea and, therefore, is a menace.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended April 11, 570 cases of tuberculosis, with 211 deaths; 368 cases of diphtheria, with 65 deaths; 1,877 cases of measles, with 48 deaths; 985 cases of scarlet fever, with 54 deaths; 23 cases of typhoid fever, with 4 deaths; 12 cases of whooping cough, with one death; 14 cases of cerebrospinal meningitis, with 7 deaths, and 166 cases of varicella, a total of 4,015 cases and 390 deaths.

Crusade for Pure Milk Begun.—The New York milk committee has begun its season's work and its plans embrace work supplementary to the Strauss milk stations, and the education of mothers by nurses, who will divide their time between dispensing milk at the stations and instructing mothers. They will also endeavor to assist mothers in breast-feeding their infants. Last year 17,000 babies under one year of age died, the majority through improper care and feeding. The first of a series of five meetings was held on April 4, at which the "Need of Improving New York's Milk Supply" was discussed. At the meeting on April 11 the subject was tuberculosis and Professor Koch was present.

The Crusade Against Tuberculosis.—The committee on the prevention of tuberculosis of the Charity Organization Society of this city has made a report of the results of twenty months' experience in the treatment of tuberculosis. Last year 8,999 persons died of tuberculosis in the city, and there are to-day scattered through its tenements more than 30,000 tuberculous sick. The report describes the entire scope of the work, the system of tuberculosis dispensaries, the day camp, the home treatment and the results obtained when it was deemed best to send the patients to the country or to sanatoria. The comparative results of the various methods of treatment are as follows: Of 127 patients treated at home 51 per cent. were improved and 49 per cent. were progressive; of 87 patients treated in the day camp 69 per cent. were improved and 31 per cent. were progressive; of 12 cases in which the home and day camp was combined 75 per cent. were improved and 25 per cent. were progressive; of 47 patients treated in sanatoria 83 per cent. were improved and 17 per cent. were progressive, and of 48 patients treated in the country 75 per cent. were improved and 25 per cent. were progressive. The general conclusions are that while home treatment is inevitable in advanced cases, it is a dangerous substitute for isolation in a hospital, and that cure in tenements is most difficult. The day camp has proved a valuable solution of the tuberculosis problem. The establishment of a number of day camps accessible to the various tenement districts is strongly advocated for those who must necessarily remain at home.

OHIO.

Medical Library Organized.—At a meeting of the physicians of Youngstown, April 3, a Medical Library Association was organized and the following directors elected: Drs. Colin R. Clark, Sidney M. McCurdy, Carlos C. Booth, Renwick H. Montgomery and Ida Clarke. The purpose of the club is to subscribe to standard medical publications and to purchase medical books which will be kept in the custody of the public library.

Communicable Diseases.—During the last week in March there were 9 new cases of cerebrospinal meningitis in Cincinnati, with 3 deaths.——Cleveland reports 4 new cases of cerebrospinal meningitis for the week ended April 11.——Smallpox is again reported from Lorain.——Many cases of smallpox are reported at Sherrodsville.——The State Board of Health advocates a modification of quarantine in smallpox, allowing persons who have been exposed to smallpox to be placed in "quarantine of observation," including removal of patient to the hospital, disinfection of his home, and vaccination of other members of the household with liberty, keeping them under the observation of a physician for 15 days after the time of last exposure.——During the first seven days of April, 67 cases of typhoid fever were reported in Columbus.——Influenza is reported to be epidemic in Toledo.——Smallpox is said to have broken out at Mount Union College.——Scarlet fever is reported to be epidemic at Navarre.

Personal.—Dr. Augustus Ravogli, Cincinnati, has been reappointed a member of the State Board of Medical Registration and Examination.——Dr. Harley E. McDonald, Columbus, has been made assistant to the medical director of the Pacific Mutual Life Insurance Company, Los Angeles, Cal.——Dr. William H. Begg, Columbus Grove, has been reappointed a trustee of the Toledo State Hospital.——Dr. Jefferson B. Scearce, dean of the medical profession of Chillicothe, was the guest of honor at a banquet given by the medical profession of southern Ohio, March 16, on the occasion of the fiftieth anniversary of his entrance into practice.——Dr. Charles O. Probst, Columbus, secretary of the State Board of Health, has been appointed a member of the award committee of the International Tuberculosis Congress.——Dr. George V. Ess, Massillon, has been appointed a member of the local board of health.——Drs. B. Frank Barnes and James G. Shirer, Newark, have been appointed surgeons for the Ohio Electric Railway Company.——Dr. Julius H. Jacobson, Toledo, physician of the Lucas County Infirmary, has been given two months' leave of absence and will visit Europe.——Dr. Charles J. Aldrich, Cleveland, is seriously ill with bacteriemia at Lakeside Hospital.——Dr. Johnson W. Gordon, Bowerston, while in Dennison March 31, sustained a compound fracture of the hip.——Dr. Leander D. Stoner, Canton, was operated on for appendicitis April 7.——Dr. Charles E. Sawyer, Marion, announces that he has recovered from his accident and protracted illness and has resumed professional work.——Dr. James E. Torrence, Hamilton, who is in a hospital in Cincinnati, is reported to be improving.——Dr. Frank W. Harmon, superintendent of Longview Hospital for the Insane, Cincinnati, is seriously ill with erysipelas.

Cincinnati.

License Revoked.—By unanimous vote of the State Board of Medical Examiners at its meeting April 7, the license of Dr. F. G. Leslie is said to have been ordered revoked.

Alumni Organized.—On March 31 the alumni of the University of Pennsylvania from Cincinnati and vicinity organized a branch alumni association, electing the following officers: President, Dr. H. Stowe Garlick; vice-president, Mr. Alfred B. Kelley; secretary-treasurer, Dr. Ashton B. Heyl, and directors, Dr. Herman Christman, Frank D. Phinney, Eugene May, and Mr. George A. Dieterle.

Library Divided.—The report made by local physicians that text-books and works of reference for physicians had been moved from the Public Library to the library of the City Hospital is denied by the city librarian, who admits that some medical and other books said to be antiquated have been moved to branch libraries, to make room for more modern literature in the public library.

PENNSYLVANIA.

Tuberculosis Exhibit at Reading.—The tuberculosis exhibit recently held at Reading was visited by 10,000 people. The Berks County Society for the Study and Prevention of Tuberculosis has already several patients under its care.

Scarlet Fever Epidemic.—Scarlet fever is reported to be epidemic in Blakely borough. Thus far over 50 cases have been reported and the schools and churches have been closed. Assistance has been asked from the state health commissioner.

Pennsylvania Society for the Prevention of Tuberculosis.—The annual meeting of the Pennsylvania Society for the Prevention of Tuberculosis was held in Philadelphia April 8, and plans for enlarging the scope and effectiveness of the work of the society were discussed. The sum of $4,595.86 was received through contributions during the year. Of this, $4,318.60 has been spent. An advisory council of 20 prominent citizens will be appointed to help the officers in the work. The following officers were appointed: President, Dr. Charles J. Hatfield; vice-presidents, Drs. James M. Anders, Jacob Solis-Cohen, Seneca Egbert, Lawrence F. Flick, John H. Musser, Alfred Stengel, James Tyson and James C. Wilson, all of Philadelphia; Dr. Samuel G. Dixon, Harrisburg; Dr. J. Wesley Ellenberger, Harrisburg; Dr. Lawrence Litchfield, Pittsburg; Dr. Edgar M. Green, Easton, and Dr. William H. Hartzell, Allentown; secretary, Dr. Ward Brinton, Philadelphia, and directors, Drs. Howard S. Anders, William W. Cadbury, Frank A. Craig, Joseph Clothier, Albert P. Francine, J. Clinton Foltz, C. Lincoln Furbush, Henry R. M. Landis, George W. Norris, William D. Robinson and Joseph P. Walsh, Philadelphia, and Dr. Charles H. Miner, Wilkes-Barre.

Philadelphia.

Personal.—Dr. Henry, Leffmann has been appointed by the president of the county medical society, chairman of the board of directors, to succeed Dr. Henry W. Cattell, resigned.——Dr. Charles B. Hirsch was operated on in Jefferson Hospital April 7, for acute mastoiditis.

Medical Treatment at House of Correction.—An effort is on foot to have councils make some radical changes in the methods of treatment now used at the House of Correction. One of the important features is considered the care of alcoholics in that institution. Councils will be asked to have physicians under the direction of the department of health and charities not only treat victims of alcohol scientifically, but also have power to recommend how long an individual shall be confined in the institution.

Dr. McCormack Coming.—Dr. J. N. McCormack, chairman of the Committee on Organization of the American Medical Association, will address the members of the profession of this city on Monday evening, May 11, at the New Century Club hall. The committee in charge is as follows: Drs. James B. Walker, Edward E. Montgomery, John G. Clark, William L. Rodman, Walter L. Pyle, Charles A. E. Codman, Alexander R. Craig, J. Gurney Taylor, Joseph A. Moore and Ernest W. Kelsey, chairman. This committee held its first meeting April 9.

Health Report.—The total number of deaths reported for the week ended April 11 was 534, a decrease of 19 from the previous week and a decrease of 63 from the corresponding week of 1907. The principal causes of death were: Typhoid fever, 15; scarlet fever, 9; diphtheria, 14; consumption, 62; cancer, 23; meningitis, 5; apoplexy, 8; paralysis, 6; heart disease, 60; acute respiratory diseases, 81; enteritis, 15; Bright's disease, 42; congenital debility, 12; puerperal septicemia, 5; premature birth, 14; old age, 7; suicide, 8; accidents, 15, and marasmus, 9. There were 249 cases of contagious diseases reported, with 38 deaths, as compared with 233 cases and 31 deaths reported in the preceding week.

WISCONSIN.

Fire in Hospital.—Fire practically destroyed the Northwestern Hospital, Chippewa Falls, April 1. Thanks to the coolness of the house staff and nurses, no panic resulted and the 30 patients were removed in safety.

Epidemic Diseases.—A second epidemic of scarlet fever is now prevalent in Caledonia.——Smallpox continues to spread in Manitowoc. All the new cases are in the south and southeast of the city.——Four new cases of smallpox have developed in De Pere.

Newspapers to be Prosecuted.—At a meeting of the State Medical Board, April 14, a resolution was adopted instructing the attorney for the board, A. C. Umbreit, to proceed against any newspaper publishing any advertisement which violates the letter or spirit of the law against obscene medical advertising.

Fined for Not Reporting Birth.—Dr. Horace M. Brown, Milwaukee, is said to have been found guilty, April 4, for violation of the vital statistics law, which requires registration of physicians and report of births. He is said to have been sentenced to pay a fine of $20 and costs, but a stay of sixty days was granted. Dr. Brown refused to re-register his name when asked to do so by the health commissioner, saying that he had registered once and that was sufficient. The second count of the charge followed because Dr. Brown was unable to secure the proper blank from the department, as he had not re-registered.

Personal.—Dr. William E. Ground, president of the state medical society, who has been seriously ill in Biloxi, Miss., has so improved that he expects to be able to return to his home and resume practice about May 1.——Dr. William J. Thomson, Portage, has purchased the Reed House and will convert it into a hospital, which will be ready to receive patients about May 1.——Dr. Gustavus I. Hogue has returned to Milwaukee after a year in Europe.——Dr. William E. Durr, Milwaukee, was operated on at St. Joseph's Hospital, Rochester, Minn., April 6.——Dr. Daniel B. Collins, Madison, who was operated on recently in a hospital in Chicago, is said to be convalescent.

GENERAL.

Pan-American Medical Congress.—At this congress, to be held in Guatemala, August 5 to 10, the following subjects have been announced for general discussion.

General Medicine: Tropical anemias. The present cause and treatment of cancer.
Surgery: Prostatectomy: Operations for repairing the ureters.
Hygiene and Demography: Should the segregation of lepers be enforced? Demographic distribution of tuberculosis in America.
Mental and Nervous Diseases: Classification of mental diseases. A discussion of dementia præcox.
Internal Medicine: Tropical diseases, the character and causes of which have not yet been determined. Ankylostoma.
Gynecology: Can metritis be considered a predisposing cause of cancer of the uterus? The best means of keeping the uterus in position in case of prolapse.
Military Sanitation: First aid to the injured on the battle field and organization of an advance guard to render assistance. The hygienic equipment of the soldier. The supply of drinking water in ports; its distribution and the best way of preventing its contamination by insects.

FOREIGN.

Brazilian Psychiatrical, Neurological and Medicolegal Society.—A society with this name has recently been organized in Brazil to promote the interests of psychiatry, neurology and medical jurisprudence and to stimulate research in these lines. The active membership is limited. Meetings are held monthly at Rio de Janeiro at the National Hospital for the Insane. The officers of the society at present are Prof. J. Moreira, president, and Prof. A. Peixoto, secretary, with C. Eiras, vice-president, and H. Roxo, assistant secretary.

Mishaps of the Russian National Medical Association.—The annual congress of the Russian Pirogoff Medical Association, the national organization, can not be held this year, as the authorities have refused the usual permit. The February number of the journal issued by the organization was also confiscated recently on account of an article by W. Kanel which failed to pass the censor on account of its revolutionary tendency. The editor of the journal, J. W. Popoff, is also held legally responsible for permitting the publication of the article.

Prize for Best Essay on Sexual Matters for the Young.—*Hygiea* announces that an anonymous contribution has provided funds for two prizes of nearly $400 and $200, respectively, for the best work, written in popular style, to aid in enlightening and educating the young in what they should know in regard to sexual matters. The works must be sent in anonymously and be received by Dr. S. G. Nyblin at Björnlunda, Sweden, before Nov. 1, 1908. As no language is mentioned in the announcement, which is in Swedish, the competing works must presumably be in that tongue.

Increase of Appendicitis in Prussia.—The official statistics show that the number of cases of appendicitis in Prussia is constantly increasing, the figure for 1903 being 8,412; for 1904, 10,793; for 1905, 13,724, and for 1906, 16,781. The mortality has dropped, however, from 9.46 per cent. to 6.68 per cent. during this period. About 25 per cent. of the patients were under 15, and 29 per cent. between 15 and 30. The mortality was considerably higher among the younger patients and in certain classes of society, the army and bureaucracy yielding 11.15 per cent. of the mortality, while these classes contribute only 2.56 per cent. to the general mortality. The sexes were about evenly divided, the slight preponderance being in males.

Condemnation of Quacks at Berlin.—Criminal proceedings were recently instituted against an advertising quack named Bruckhoff, who had several "medical institutes" at different points. It was proved that these institutes were practically

harems for his own pleasure, where criminal abortion was practiced freely. He was condemned to 18 months' imprisonment and incarcerated at once to prevent his escape.——The proprietor of "Augenwol," a remedy advertised as a cure for eye affections, lured a youth of 16 to buy seven bottles in turn of this remedy, promising a cure of his severe eye affection. By the end of this time the affection had become incurable and vision is now nearly totally lost. The quack was condemned by the Berlin courts to a fine of $25 or twenty days' imprisonment.

Appeal to Physicians the World Around to Take a Stand Against Alcohol.—An international league of total abstinence medical men was organized at the Eleventh International Anti-Alcohol Congress held at Stockholm last year. The league recently has issued an appeal to physicians in all lands and of all tongues urging their cooperation to deliver the peoples from alcoholism. The appeal states that it is peculiarly incumbent on the medical profession to enlighten the public in regard to the fact that an extraordinarily large part of the evils of which the world complains are due to alcohol, regardless of the kind of liquor in which it is taken. If the reign of liquor drinking continues the results will always be the same as history has shown in the past: demoralization and degeneracy of individuals and peoples. The appeal states further that liquor is not a necessity for any kind of living being; the need for it exists only where an artificial appetite has been created. All normal organisms perform their functions better without alcohol; but it is specially dangerous for young and growing tissues. In order to protect future generations it is necessary to refrain from the use of alcohol, for only by widespread abstinence can alcoholism and its train of evils be reduced to the minimum. After this preamble the appeal urges all physicians to sign a petition entitled: "Appeal from the Physicians of All Countries to governments, rulers, legislators, teachers, clergymen and all who have the welfare of the present and future generations at heart. We, who are members of the medical profession and by our studies peculiarly qualified to recognize and appreciate the nature and the action of alcoholic drinks, to declare it as our settled conviction that these drinks are entirely unnecessary and extremely injurious so that the evils resulting from the drinking of alcoholic beverages should and must be prevented and exterminated. Above all, the young should be educated in every possible way and by example and be protected by legislation, so that they may learn to refrain from alcoholic beverages. This must be done in order to promote and ensure the happiness, welfare and progress of the nations." The appeal is signed by Holitscher of Pirkenhammer, Santesson of Stockholm, Ridge of Enfield, Laitinen of Helsingfors, Olrik of Frederiksvaerd, Stein of Budapest and Vogt of Christiania, and they ask every physician willing to cooperate to send his name and address to the secretary of the league, Dr. Holitscher, Pirkenhammer bei Karlsbad, Bohemia, so that his name can be added to the petition. The appeal is published in German in the *Allg. med. Central.-Ztg.*, March 21.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, April 4, 1908.

Deaths Under Anesthetics.

This subject was discussed at some length at a recent meeting of the Medicolegal Society. A resolution was forwarded to the General Medical Council and the Privy Council, respectively, stating that in view of the importance of the subject, the society considers that instruction in administration of anesthetics should be among the requirements for professional education. The present state of affairs is antiquated and slipshod. Any person may administer an anesthetic, no matter whether he is qualified or not; and provided he does so to the best of his ability and with no unlawful motive, he is not likely to be punished or blamed if the patient should die as a result.

The Indian Plague Commission.

The Indian government has issued a summary of the work of the plague commission, which may be regarded as the most recent and most authoritative pronouncement on the contagion of the disease. The conclusions are as follows: 1. Pneumonic plague is highly contagious, but it is rare (less than 3 per cent. of all cases) and plays a very small part in the spread of the disease. 2. Bubonic plague in man is entirely dependent on the disease in the rat. 3. The infection is conveyed from rat to rat and from rat to man solely by the rat flea. 4. A case of bubonic plague in man is not in itself infectious. 5. A large majority of cases of plague occur singly in houses. When more than one case occurs in a house the attacks are generally nearly simultaneous. 6. Plague is generally conveyed from place to place by imported rat fleas, which are carried by people on their persons or in baggage. The human agent not infrequently himself escapes infection. 7. Insanitary conditions have no relation to the occurrence of plague, except in so far as they favor infection by rats. 8. The non-epidemic season is bridged over by acute plague in the rat accompanied by a few cases in man.

The Polyclinic.

The ninth annual report of the Medical Graduates College and Polyclinic shows gratifying progress. There are now 679 names on the college register. At the clinics, 1,127 cases of disease, many of them of extreme rarity, have been shown, and the number of physicians at these and at the lectures amounted to 13,862. Four sessions of practical classes, each of six weeks' duration, a vacation course of three weeks in September and two special courses of instruction in opsonins and vaccine therapy were held during the year and attended by 238 practitioners. Several additions have been made during the year to the Hutchinson Museum and the whole collection is now classified and arranged in such a manner as to permit of speedy and easy reference. This collection is unique, and is the life work of Mr. Jonathan Hutchinson, who has presented it to the polyclinic. It consists of portraits of disease, largely dermatologic, which have been collected by Mr. Hutchinson. Most of them are original water-color drawings of Mr. Hutchinson's cases by Mr. Burgess. The most important ones are alcoholic drinks, do declare it as our settled conviction that many are contained in portfolios in cabinets. The Hutchinson Museum may be compared to the celebrated museum of the St. Louis Hospital of Paris, but it differs from the latter in consisting almost entirely of drawings and contains very few wax models. No collection, the work of one man, exists in the world comparable to it; for a parallel one has to go to the collection of John Hunter, but that differed in being physiologic and pathologic. This is almost entirely clinical, and was first exhibited by Mr. Hutchinson in a private building at Great Portland Street, called "The Clinical Museum." Here he held weekly demonstrations of interesting cases, and side by side with the patient showed portraits of the disease. However rare the case sent to him, he could generally match it by one of his portraits. On the foundation of the Polyclinic, which was the result of his initiative and largely the result of his labors, he transferred his collection to it. Here he holds weekly demonstrations, as he did at the Clinical Museum. His museum is worthy of the attention of medical visitors to London. It epitomizes the life work of one of the keenest observers and most philosophic and versatile minds of this or any age.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, April 3, 1908.

Farewell Lecture of Professor Chrobak.

With the completion of the gynecologic clinic in the new General Hospital Professor Chrobak, who for the last nineteen years was the director of this department, has resigned, because, as he put it, he felt the necessity of handing over the new premises and new working facilities to younger men. The farewell lecture was given by him in the new building, which at the same time was formally opened. In the large audience present were representatives of the government, the senate of the university, and all the presidents of the medical and gynecologic societies of which the retiring surgeon is honorary or ordinary member. The successor of Chrobak, Professor von Rosthorn, was also present. A number of Chrobak's former assistants and pupils, as well as numerous students, filled the hall. After speeches by the various delegates Chrobak delivered his last official lecture to the students; in it he admonished them that the main principle underlying the work of every physician must be "help and not harm." It was only with difficulty that Chrobak, whose surgical skill and scientific position are alike acknowledged in gynecologic circles, was induced to become lecturer on his own specialty. He has always remained modest and quiet in character. He favored the idea that obstetrics required only the observation of the physiologic laws of Nature; therefore, so long as possible conservatism was the rule at his clinic in the conduct of labor cases. The clinic will be taken over in June by von Rosthorn; meanwhile Privat-docent Peham, who has substituted for Chrobak for some time, will be temporary director. Chrobak retires four years before he reaches the age limit; he is 66 years of age. A bust of Chrobak, made by his daughter, was unveiled after the lecture and was given to the hospital.

Therapeutics

[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable. Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters; that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses.]

Magnesii Oxidum.

MAGNESIA, CALCINED MAGNESIA, OR LIGHT MAGNESIA.

Magnesium oxid is a light, fine white powder, odorless and practically tasteless. It is insoluble in alcohol and water, but soluble in dilute acids.

It has no local action on the skin other than that of a dusting powder. In the stomach it acts as an antacid, combining and neutralizing any acid that is present, and the resulting combination causes it to act mildly on the bowels as a laxative.

In acidity of the stomach, whether from too much hydrochloric acid or from lactic acid fermentation, it is a valuable antidote, relieving the symptoms of pain, burning, distress and acid eructations almost immediately.

In intestinal indigestion in children, when there is intestinal flatulence and the feces are more or less acid as shown by hyperemia and irritations about the anus, magnesia is good treatment.

Magnesia is a valuable laxative for bottle-fed babies, as it is tasteless and is readily administered in milk. A good preparation for this purpose is the milk of magnesia of the National Formulary.

The laxative action of magnesia may be increased by administering it with a little lemon juice or lemonade.

As magnesia forms insoluble compounds with soluble arsenic and mercury salts, it may be used as an antidote in poisoning from these metals, and is specifically recognized in its antidotal action of arsenic poisoning under the name of Ferri Hydroxidum cum Magnesii Oxido, U. S. P., i. e., the "arsenic antidote." If more active alkalies are not at hand, magnesia may well be used in poisoning with acids.

As a cathartic magnesia is not sufficiently active to warrant its use, the dose required being disagreeably large. As a gentle laxative, given two or three times a day, when there is an abnormal acidity of the stomach, it is certainly of advantage.

The dose of magnesia (magnesii oxidum) while stated to be 2 grams, is too much powder ordinarily to be taken at one dose, and as above stated, if a cathartic is needed, other drugs should be used. As a gentle laxative three times a day, from 0.30 to 0.50 gram (from 5 to 10 grains) is often efficient, and if there is hyperacidity of the stomach, it is better given after meals. A good method of administering magnesia is in milk, or in a little effervescing water, as carbonated water or vichy. Of course, magnesia could be put into wafers or konseals.

MAGNESII OXIDUM PONDEROSUM, U. S. P., heavy magnesium oxid, or heavy magnesia, is a fine white powder, about three and one-half times as heavy as the light magnesia, and differs from the latter in not readily uniting with water to form the hydroxid. It has no therapeutic advantages over the light magnesia.

MAGNESII CARBONAS, U. S. P., magnesium carbonate, is a light, white, insoluble powder, odorless, and almost tasteless, and may be used as an antacid, but has no advantage over the magnesia. It has almost no laxative properties.

MAGMA MAGNESIÆ, N. F., milk of magnesia, is a mixture holding 5 per cent. of magnesium hydroxid in suspension. It is an antacid and mildly laxative. The adult dose is from two to three teaspoonfuls. As above stated, it is a useful addition, as a laxative, to the milk of infants, the dose being whatever is found sufficient to produce mild laxative effects.

Magnesia may be administered as follows:

For gastritis with constipation:

℞.	gm.		
Bismuthi subnitratis	20	or	3v
Magnesii oxidi	10		3iiss

M. et fac chartulas 20.

Sig.: One powder, three times a day, before meals.

If there is hyperacidity of the stomach:

℞.	gm.		
Bismuthi subgalatis	10		3iiss
Magnesii oxidi	6	or	3iss
Sodii bicarbonatis	10		3iiss

M. et fac chartulas 20.

Sig.: One powder, three times a day, before meals.

Or, if there is much gastric flatulence:

℞.	gm.		
Bismuthi subnitratis	20		3v
Magnesii oxidi	5	or	
Carbonis ligni	5		āā, gr. lxxv

M. et fac chartulas 20.

Sig.: One powder three times a day, after meals.

Or:

℞.	gm.		
Sodii bicarbonatis	10	or	3iiss
Magnesii oxidi	6		3iss

M. et fac konseal. 20.

Sig.: A wafer three times a day, after meals.

As a morning laxative:

℞.	gm.		
Magnesii oxidi	15	or	℥ss

Fac chartulas 10.

Sig.: One powder, in a glass of lemonade, before breakfast.

Postpartum Hemorrhage.

In a series of papers considering this subject in the *New York Medical Journal* for January 25, February 1, and February 8, 1908, the following digest represents the combined opinions of the contributors:

The causes in general may be summed up as: Those which interfere with uterine contractions or cause relaxation of the uterine muscle; lacerations of the parturient canal, and partial or complete retention of the placenta. The management of the condition presents practically nothing new, viz.: Administration of ergot; removal of uterine contents; repairs of lacerations; massage of the uterus; hot intrauterine douches; packing the uterus.

PROPHYLAXIS.

Avoid precipitate labors. Avoid protracted labors. Avoid chloroform in slow labors; chloral (one gram, repeated in an hour if necessary) is preferable. Avoid quinin to stimulate contractions, as some observers think it predisposes to inertia. If there is history of hemophilia, give calcium chlorid for three months prior to delivery. At the onset of labor see that the bladder and rectum are empty, and as soon as the head is born ergot should be given (preferably by the hypodermic syringe), and the fundus massaged to stimulate contractions.

If hemorrhage begins during the period between the birth of the child and the expulsion of the placenta, and without evident relaxation of the uterus, it may be due to a partial separation of the placenta or to the fact that the placenta is separated but still within the uterus.

TREATMENT.

Hemorrhage immediately following the birth of the child may be from the circular artery of the cervix; from a lacerated vagina, or from a lacerated perineum. In such cases, with

the use of the speculum and a constant stream of water to wash away the flowing blood, immediate repair of the laceration is usually easy, and correctly placed stitches will stop the hemorrhage.

If the bleeding does not amount to much more than oozing, swabbing with suprarenal solutions may be effective. The styptic salts of iron are attended with too much danger to justify their use except as a last resort.

The Credé method of expulsion of the placenta will usually stop the flow by removing the obstacle, and will stimulate the uterus to contract. Failing thus to remove the placenta, the hand should be introduced into the uterus and the contents removed.

The placenta having been born, if the hemorrhage continues and the uterus is soft and flabby, contraction of that organ is the end aimed at. This is generally accomplished with the hot (110 to 115 F.) intrauterine douche. Before giving this, the physician should make sure that the entire contents of the uterus have been removed, and that organ should be massaged while the douche is in process. For the douche, use hot sterile water or physiologic (about a teaspoonful of salt to a pint of water) saline solution. Solutions of stronger drugs or preparations are apparently of no additional benefit.

Contractions may be started sometimes by the introduction of a piece of ice into the uterus, a pledget of cotton wet in vinegar or a 2 per cent. acetic acid solution.

If the hemorrhage still continues, Bryan, Philadelphia, advises the "bimanual manipulation," usually accomplished "by passing two fingers of the right hand high up into the vagina, along the posterior wall, pressing the lower segment and cervix forward toward the symphysis pubis, at the same time passing the fingers of the left hand deep in between the umbilicus and the uterus so that the hand on the outside, the fundus resting in the palm of his hand, may be pushed downward and forward against the pubes, thus forming a sort of temporary anteflexion."

When these methods fail, the next thing to do is to pack the uterus. The volcella forceps are preferable for this, as there is little danger that the cervix will contract so as not to admit them, and the ordinary uterine dressing forceps are sharp enough at their points to admit an element of danger from the possibility of their being pushed through the fundus. The packing may remain in the uterus for from six to twenty-four hours, and when it is removed another packing should be ready to replace it, if necessary.

Pneumonia.

Dr. W. G. Cain, Epping, N. H., in the *Therapeutic Gazette* for Jan. 15, 1908, relates his experience with guaiacol in the treatment of pneumonia. His success in reducing the temperature and shortening the disease causes him to urge the trial of guaiacol by other clinicians. He has treated fifty consecutive pneumonia patients with guaiacol, and all recovered.

The guaiacol is rubbed into the skin, the abdomen being the place of selection (unless there is pain in the chest, and then it is rubbed into the painful region), and no two applications are made in the same place. The skin is first thoroughly cleansed with soap and water, and then the average adult dose, 20 minims, or about 1.5 c.c., is dropped slowly from a medicine dropper and rubbed in with the end of one finger. Cain says the guaiacol is generally absorbed in from one to two minutes, and cautions against the nurse or physician using other than the tip of the finger to rub it into the patient, as else the operator may absorb considerable of the guaiacol. The agent acts very promptly, he states; in an hour the patient perspires freely, and the temperature, pulse and respiration and color of skin improve. Within six hours the temperature drops from two to four degrees, and all the general symptoms are much improved. He does not repeat the application in less than twelve hours, and in some mild cases the treatment is not repeated at all, the temperature not rising again much above normal. The average number of treatments is about three or four. Cain finds many instances of the disease becoming arrested, physical signs not increasing, and the dulness diminishing, and the sputum, if blood-stained at first, becoming free from blood in a day or two.

Guaiacol moderates the action of the heart, but not unduly so. However, an agent of such potency is not to be trifled with, and Cain recommends that the physician make the applications himself. Very little other medication seems necessary.

Guaiacol.

Guaiacol is a methyl ether of pyrocatechin and is a constituent of creosote, which is a wood tar. Its action on the system is similar to carbolic acid or phenol, but is perhaps even more poisonous. It is, then, a depressant drug, depressing the nervous system and the circulation, and is excreted by the kidneys in combination with sulphuric and glycuronic acids. It is quickly absorbed from the skin, causing a fall of temperature which is really a symptom of its poisonous action, hence the greater the fall of temperature the more severe and intense its action. With this fall of temperature there is often circulatory weakness combined with perspiration. Although when applied to the skin, even in such small quantities as from 10 to 20 drops, the temperature will be reduced, its action has been found so intense in many instances as to cause it not to be much used as an antipyretic.

Pharmacology

THE BROADER AIMS OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

TORALD SOLLMANN, M.D.
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CLEVELAND, OHIO.

(*Continued from page 1280.*)

V. THE ATTITUDE OF THE MANUFACTURERS TOWARD THE COUNCIL.

The successful compiling of information about proprietary articles depended largely on the cooperation of the manufacturers. Accordingly, as one of its first actions the Council issued a circular, setting forth its objects, explaining its rules, and calling on the manufacturers for their opinions. This circular elicited a large number of very favorable, and in some cases, enthusiastic replies, of which some were undoubtedly a play to the gallery. Even this preliminary expression of approval by the manufacturer, however, should be given a large measure of credit as it meant a recognition of the principle that the medical profession, through its representatives, was entitled to a voice in the conduct of what had hitherto been regarded as strictly a private business. This involved a real sacrifice, which is the more creditable since the concession was purely voluntary; for the Council had no direct means of enforcing its recognition. With many manufacturers, doubtless, this policy was dictated by enlightened self-interest—the shadow of coming events was so evident that they did not dare to offer opposition. The tone of most of the letters, however, showed that the policy was the expressions of the honest convictions of the writers; that the aims of the Council were identical with those of the higher class of manufacturers, and that this means of cooperation for reforms, for which they themselves had been striving, was gladly welcomed. There could be no more convincing plea for the need of the work

which the Council had undertaken, than was contained in these letters.

Giving these men every credit for their good intentions, let us inquire how they have carried them out. Reforms in the abstract, particularly as they affect the other fellow, are very different from concrete instances which strike at one's own pocket-book; especially is this true when one is accustomed to look at life from the "business standpoint."

Naturally the experiences of the Council have been varied. Two firms threatened the Council with legal proceedings if it should dare to publish anything about their product; others confined their attacks to insinuations in the paid advertising pages of medical journals; still others were long on talk and short on performance, endeavoring to cover the real issue under a cloak of meaningless verbiage and technical quibbles. These were the houses which had gained a certain degree of commercial success by abusing the confidence of both the medical and pharmaceutical professions and it could scarcely be expected that such manufacturers should experience spontaneously an entire change of heart, a moral regeneration. Such concerns can only be made to reform by force, if that is thought worth while, or by ostracism. Their defection was expected and did not shake the confidence of the Council in the justice of its cause. It was more than offset by the loyal adherence and support of the majority of the manufacturers.

As a tangible evidence of the interest manufacturers have taken in the work of the Council and of their desire to secure the approval of that body, of 670 proprietary products examined by the Council, 580 were submitted voluntarily by the manufacturers. It is true that only about 45 per cent. of these have been admitted. Some 40 per cent. were refused recognition. Some of the latter are absolutely hopeless; and here, again, the work of the Council has borne fruit, in that a number of manufacturers have voluntarily withdrawn unscientific and otherwise objectionable products from the market as soon as they had properly considered the objections of the Council.

About 15 per cent. of the submissions are held in abeyance. Final action on the majority of these has been postponed pending some modifications of the claims made by the manufacturers; others are awaiting chemical, pharmacologic or other investigation by the Council. Some of these products presented only partial conflict with the rules and it has been most gratifying to witness the desire on the part of some of the manufacturers to remove such conflicts, often at the cost of considerable inconvenience and sacrifice. The admission of many others is merely postponed until the manufacturer can supply certain information and submit more definite evidence for his claims. Here again very interesting differences were observable: A few manufacturers treated all inquiries and suggestions of the Council as personal insults, while a few other firms assumed that they were above mistakes, and that their conflicts with the rules should be made the subject of special exemption. The majority of manufacturers, however, have consistently shown their appreciation of the honest purpose of the Council; of the facts that the Council has grave responsibilities which impose on it often uncongenial tasks, and that the common purpose can be accomplished only by meeting the Council in a fair, open and cooperative spirit. I speak with some feeling when I say that the general courtesy and consideration shown by these manufacturers to the Council, in the often trying situations, will always be among my most pleasant recollections of this service. Differences of opinion have arisen and will arise and some of these I shall take occasion to discuss. The Council is bound to conflict with the commercial element where this element conflicts with scientific progress; the manufacturers, on the other hand, must keep an eye to the dividends.

There are still many commercial policies which do conflict with scientific progress and which the medical profession, and therefore, the Council, must combat. But the attitude of the manufacturers toward the Council makes me believe that the broad and far-sighted business policy which has prompted the erection of commercial research laboratories, will sooner or later extend to these points of conflict. The conviction is justified that the present objectionable practices are a survival choice of the better class of manufacturers; and that they will be abandoned as a healthy sentiment in the medical profession of the days of unscrupulous competition, rather than the will actively condemn them and thus render the better practices commercially possible.

Thus far, certainly, the better class of manufacturers have fully met the expectation of the Council, and have cheerfully borne their share of the burden. The discouragements have come from other and rather unexpected directions. Of course there are some manufacturers—but a saving sense of humor is sometimes a valuable asset!

(*To be continued.*)

Formic Acid and Formates.

The strength and industry of the ant were recognized in ancient times and the idea naturally arose that there must be some substance in the body of this insect which imparted to it its wonderful vigor. The bodies of ants were early employed in medicine both externally and internally.

In 1634 Mouffetus was so enthusiastic as to write: "From a medical point of view there are few diseases that are not cured by ants which seem like the hands of the gods." (*Au point de vue médical il est peu de maladies que ne guérissent pas les fourmis, qui semblent être comme les mains des dieux.*) H. G. Higgins gives a quotation (*Lancet*, Dec. 14, 1907) from the New London Dispensatory of 1676 describing the preparation and properties of "Liquor Formicarum." This was prepared by placing the well-cleaned insects in a bottle, setting this bottle in brown bread and baking in an oven. Its virtues are thus expressed: "Inwardly it causeth magnanimity and cures the Stone; outwardly it helps suffusions of the eyes, cures the itch, and dissipates corns and warts." These preparations had great vogue during the seventeenth and eighteenth centuries, but in the beginning of the nineteenth century they fell into disuse, although the spiritus formicarum continued to be used in Germany as an external application.

When it became known that formic acid was the irritating principle of the ant it became the subject of investigation. Since 1885 H. Schulz, Kowacs, Rabuteau and others have investigated it, but made no particular application of it to therapeutics. It was reserved for Garrigue and Clement within the last few years to revive the ancient superstitions, transferring the wonderful powers from the juice of the ant to its active constituent, formic acid.

Clement (*Lyon Médical*, 1903 and 1905) claims that formic acid improves nutrition, increases the force of the heart, assists the respiration, and greatly augments muscular force and endurance. He thinks that it is destined to set free the energies of men so as to transform society and cure alcoholism, vice, laziness and other evils. These claims he bases partly on the subjective feeling of exaltation following its use and partly on objective results from trials of muscular strength on the ergograph, before and after taking the remedy.

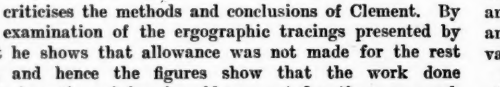
It is instructive to contrast with this enthusiastic estimate of a common, though little used substance, the meager powers which can be demonstrated by careful scientific investigation. M. C. Fleig reports (*Arch. Internat. de Pharmacodynamie et de Thérapie*, xvii, Nos. 3, 4) a thorough investigation of the action of formic acid, the formates, and formaldehyd. He concludes that sodium formate is toxic in the dose of 4 gm. per kilogram when taken by the mouth (a quantity equal to about eight ounces for an adult man). Formic acid, he asserts, is antiseptic but the formates are not. Formic acid acts like other acids on digestive secretions, but the formates have no effect unless in large doses. Absorption is favored. The acid and its salts in sufficient concentration retard or prevent the coagulation of the blood; formate of calcium is an exception to this

statement. According to this observer, the formates have no tonic action on the heart. In doses such as are used in man they exert no appreciable effect on the blood pressure; in larger doses they depress it. In animals, sodium formate produces a dilatation of the vessels of the brain, the liver and the kidney, and a corresponding contraction of the vessels in the extremities. Formic acid does not produce the effect on the respiration claimed by Clement. The formates increase the process of disassimilation. They are diuretic. In large doses they may increase the temperature. The most exact experiments failed to show any tonic action either on voluntary or involuntary muscle fiber or on the peripheral nerves, the spinal cord or the brain.

Fleig criticises the methods and conclusions of Clement. By careful examination of the ergographic tracings presented by Clement he shows that allowance was not made for the rest periods, and hence the figures show that the work done after the ingestion of formic acid was not five times as much as before, but only one and one-half times as great. This increase is due, as Fleig has shown by a number of experiments, not to the ingestion of formates, but to the effect of training. The erroneous conclusions of authors are explained by the phenomena of autosuggestion of which the importance is shown by certain typical observations. In conclusion it may be said that exact methods show no influence of formic acid on the muscles.

WHAT IS FORMIC ACID?

Formic acid is the first of the series of monatomic fatty acids, and has the formula HCOOH. It differs from the other fatty acids in that, besides possessing the characteristic properties of an acid, it also has the properties of an aldehyd; this becomes evident from a comparison of the constitutional formulas of formaldehyd, formic acid and acetic acid.



Formaldehyd. Formic acid. Acetic acid.

These formulas show that formaldehyd and formic acid both contain the group $-C(=O)H$ which is characteristic of aldehyds. Formic acid and acetic acid both contain the common group $-C(=O)OH$, characteristic of acids. Formic acid, therefore, contains the $-C(=O)H$ group and also the grouping $-C(=O)OH$, and in accordance therewith it may act either as an aldehyd, in that it reduces silver solutions, etc., or as an acid. It reacts with alkalies to form formates, of which sodium formate $HCOONa$ is typical for the alkali metals and calcium formate $(HCOO)_2Ca$ for the metals of the alkaline earths. Formic acid by the agency of bacteria splits up completely into carbon dioxid, CO_2, and hydrogen, H_2. This action may take place in the intestinal tract. It can be oxidized to carbon dioxid and water, and especially in the form of formates this process readily occurs, producing a carbonate of the metal. Thus sodium formate by the addition of one atom of oxygen becomes sodium bicarbonate, $NaHCO_2+O=NaHCO_3$.

Formic acid is neutralized in the intestines and is absorbed mainly as sodium formate, which is partly converted in the system into sodium carbonate and eliminated in the urine. As the acid when administered in a free form neutralizes some of the alkali of the system, thus lowering the alkalinity of the blood, the secretion of an acid urine occurs as a compensatory action on the part of the kidney. When a formate is given instead of the acid it increases the amount of alkali in the system and the urine correspondingly becomes less acid or alkaline. Part of the formate is excreted unchanged.

Testing of Thyroid Preparations.

The extensive use of thyroid preparations necessitates some method of determining their therapeutic value. The U. S. Pharmacopeia gives a qualitative test by which the presence of iodin can be ascertained and this can be made quantitative by slight modifications. It is generally admitted that some compound of iodin is the active ingredient of the gland, but it is still uncertain in what exact organic combination the iodin exists and whether the character of its combination affects its physiologic activity. Still it must be admitted that the estimation of iodin is the best chemical method of valuing thyroid extract that we possess to-day. F. C. Koch, in the "Proceedings of the American Pharmaceutical Association," 1907, page 371, suggests that while this method may be reliable, when it is certain that we are dealing with the unadulterated natural product, it makes insufficient provision for adulteration with other natural or artificial iodoproteins. The Pharmacopeia directs that the cold extract of the gland should be tested for iodin, but this would eliminate only soluble compounds of iodin, while according to Koch a method of distinguishing the natural iodothyreoglobulin from other natural and artificial iodoproteins by chemical means is not known. This author also calls attention to the fact that there is no standard for the iodin content of the thyroid gland because the glands of animals in various parts of the country differ and also the amount of iodin varies with the season, according to his observation, being much greater in winter than in summer.

Physiologic testing of this product has hitherto been crude, although Reid Hunt (*Jour. Biol. Chemistry*, Oct. 1905, p. 33), has proposed a very delicate test by showing that the thyroid preparations render mice less susceptible to acetonitrile poisoning. This test, while it is far more sensitive than any chemical test, needs further study before it can be used quantitatively. It is evident, therefore, that a standard for these preparations is needed, and after its establishment a method of determining whether or not the preparations conform to that standard.

Correspondence

Teaching of Medical Ethics in Medical Schools.

[During the past school year Dr. Joseph D. Bryant has been discussing with his students ethics and morals as they relate to the practice of medicine in a new way. The following is in response to our request that he describe his methods for the benefit of our readers.—EDITOR.]

NEW YORK, April 11, 1908.

To the Editor:—Regarding the best means of strengthening the ethical status of the medical profession, I would say that I am of the opinion that it will be found more logical and finally effective to begin the work for this purpose at the foundation part of the medical practitioner rather than at the station of the completed product. In other words, it seems wiser to me to direct attention to the medical student, the "root" of the product, than to leave the former untouched while hacking at the branches of the latter. In the former course of action the medical student (a physician in embryo), would be moved by the guiding influences of those whom he is anxious to heed, and, too, while in the plastic state of appreciation and receptivity. The wisdom of this course is further emphasized by the fact that rarely is it until after graduation and beginning practice, that young physicians are so placed as to fall under the seductive influences of unwholesome professional examples, or disappointed professional ambitions; either of which too often inhibit proper professional spirit, and thus lay the foundation for devious personal gain, rather than that of honest professional achievement.

Now, for the therapy of the situation. Some time ago it was unanimously decided by the faculty of the University and Bellevue Medical College that the fourth year (graduating) student should be given instruction in the principles of moral philosophy as applied to medicine. And with a unanimity of action that admitted of no doubt, to me was deputed the entire charge of the matter, which accordingly was carried out in the following manner:

During the first half of the term, twice weekly, I conducted a surgical conference for two hours, on walking surgical cases. During the last ten or fifteen minutes of these exercises consideration was given to paragraphs of the "Principles of Medical Ethics" of the American Medical Association, which for the purpose of fixing attention and thought were plainly written on the blackboard. The interest shown by the students in the interpretation of the paragraphs and the questions suggested by them of an ethical character, were sometimes amusing, always instructive, and ever of common advantage. Inde-

pendent ethical problems were invited and were forthcoming from members of the class in an abundance and of a kind which emphasized in no uncertain manner the profound interest of the students, and the great need of this form of instruction. Thus, all the chief topics of the "Principles of Ethics" were considered and with a degree of thoughtful attention, bespeaking the fact that students themselves, as one would expect, are open-minded and are easily impressed with the importance and need of sound guidance during the stage of their inexperience. In this connection it may be of passing interest to know that a few days ago a learned and distinguished colleague submitted to me for answer an ethical question of so simple and self-evident bearing as to prompt the rather ungracious response on my part, "The students of the fourth-year class would hardly need to ask such a question!" In order that students may early be given opportunity for thought in ethical matters, why not send copies of the "Principles of Medical Ethics" to the third-year class also?

JOSEPH D. BRYANT.

Pennsylvania Undergraduate Society.

PHILADELPHIA, April 18, 1908.

To the Editor:—The Undergraduate Medical Association of the University of Pennsylvania held its first annual meeting April 8, and marked thereby a distinct and epoch-making innovation in the history of medical teaching. Founded on the general lines of the American Medical Association, composed of the members of the medical societies of the university and any other members of the medical department who care to join, the association aims to encourage the spirit of research among its members and to afford the best of them an opportunity to gain an invaluable experience in the preparation and presentation of scientific papers. The day was set apart by the authorities for the purposes of the association. It was divided into three parts: A scientific session in the morning, followed by a luncheon given by the faculty to the members of the fourth-year class and the officers of the association, a scientific session in the afternoon, and a banquet in the evening.

The papers presented were eleven in number and covered the following subjects: "Opsonic Therapy," "Excretory Efficiency of the Kidney," "Visceral Reflexes," "Blood Pressure in Eclampsia," "Psychotherapy," "Intermittent Lameness," "Polioencephalitis Superior," "Endometrium in Mentsruation," "Experimental Colitis," "Etiology of Empyema," and an "Original Method of Lengthening the Long Bones."

These papers were not only thorough reviews of the literature and terse presentations of the present status of the subject, but, with only one or two exceptions, they contained the results of actual clinical and laboratory studies. The absolute scientific value of the papers would compare most favorably with the average work presented at any general medical and surgical meeting—in fact, we fear unfavorably to the latter.

Not only were the papers of a most surprising grade, but the manner of presentation, without a single exception, would put to shame the exhibition too often seen in the congregations of the elders. There were eleven papers, prepared to be presented within the allotted time, and, if by any miscalculation that limit was exceeded in the least, there was a firmness behind the gavel which made it possible for the sessions to begin on time, and close on time, and to finish the entire program!

The scientific session of the afternoon was to have been closed by the orator of the day, Dr. S. Weir Mitchell, with an oration on "The Conduct of the Medical Life." To the regret of all, illness prevented Dr. Mitchell from being present. Mr. Talcott Williams, LL.D., consented to take his place and addressed the association on "The Life of Dr. Mitchell." In an exquisite address Dr. Williams gave the association what was in a sense even more opportune than an address by Dr. Mitchell would have been—an outline of the life of a man who represents better than any other in the history of American medicine the perfect conduct of a wonderful medical life.

The banquet in the evening offered a final surprise. Some 250 men were in attendance, yet every detail had been worked out with a perfection which left no room for those evidences of friction which are occasionally to be noticed.

To the profession at large the first meeting of an undergraduate medical association carries a warning of tremendous significance. When a group of fourth-year students, with hospital examinations, their final university examinations, and state board examinations staring them in the face, can conceive and prepare so well a program of real scientific value, and execute it with such business sense, the older members of the profession, especially those who would teach these young men, must gird up their loins and make haste, lest they be trodden under foot.

T. E. C.

Association News

THE CHICAGO NUMBER.

Special Illustrated Number Containing Data About the Approaching Session.

Next week's JOURNAL (May 2) will be the special number preliminary to the annual session of the American Medical Association, to be held in Chicago, June 2 to 5. This issue will contain matter, with illustrations, relative to Chicago, the programs of the various Sections, a list of hotels and meeting places, an advance announcement of the entertainments, a map covering that part of the city in which the meetings are to be held, and other information of interest to all who expect to attend the annual session.

In our issue for March 28 we gave a list of the chief hotels, with rates. In connection with this list attention was called to the advisability of making hotel reservations as early as possible, and this we again repeat. Dr. L. L. McArthur, 100 State Street, is Chairman of the Hotels Committee.

The Committee on Hotels has made arrangements with H. Bates of the Reliable Renting Company, by which it will be possible to locate in private homes and boarding houses those preferring such accommodations. Letters should be addressed directly to H. Bates, care of the Reliable Renting Company, 171 Washington Street, Chicago. On failure to receive prompt reply notify Dr. McArthur.

Book Notice

THE SEMI-INSANE AND THE SEMI-RESPONSIBLE. By Joseph Grasset, Professor of Clinical Medicine at the University of Montpellier. Authorized American Edition Translated by Smith Ely Jelliffe, M.D., Ph.D., Visiting Neurologist, City Hospital, New York. Cloth. Pp. 415. Price, $2.50. New York: Funk & Wagnalls Co., 1907.

It has always been a matter of more than ordinary interest to attempt to place certain individuals in society who, while not suffering from any definite psychosis, are still sufficiently different from the ordinary run of mankind to attract more than passing attention. Horace evidently knew of such individuals, for in his delightful satires he speaks of the eccentricities of certain of his acquaintances and used, in those early days, the same words that we use to-day—foolish, crazy and cracked—as proper terms to denote their variations from the common herd that trod the Appian Way.

Modern German psychiatry, under the headings of psychopathic inferiority, psychopathic characters, etc., has attempted a classification, but Grasset here proposes, at one bound, to establish a third estate, as it were, the demi-fous, the semi-insane, including those individuals of more or less marked eccentricity, who are not mentally ill, or only so at infrequent intervals, and yet who are not to be counted always as perfectly normal. Were it not for the fact that so many of these individuals are more than ordinarily useful in society, in some of their functions, while antisocial only occasionally, the problem of their care would offer little trouble, but great capacity would seem to carry with it other signs of irregular development, and thus the problem of the genius or man of great talents, who has his less desirable psychopathic traits, becomes an integral part of the proposition.

Grasset realizes that in order to make any advance along

medicolegal lines the material must be arbitrarily classed and arranged in such a manner that legal enactment can handle it. This is the reason for his rejecting, for practical purposes, what he designates as the "one block" theory, which regards all mankind as a sliding scale from the most normal to the most abnormal. This is the scientific attitude of most scholars; while the two block theory, that which regards mankind as being divisible into two types, "those that are locked up, and those who do the locking up," is the general classification of the masses, including lawyers and legislators.

Measures founded on the one block theory lead to hopeless confusion, because of the difficulties in drawing the line; those founded on the two block theory lead to abuse, to injustice and to anarchy. Hence his separation of a distinct group, the semi-insane, which he describes in the language of the French psychiatry of Regis.

Granting the utility of Grasset's division, his remedy is simple. The demi-fous should be left alone to work their good in the world, but when by their acts they become antisocial they should be taken care of and treated. They should not be punished unless the character of their acts is such as to plainly indicate their responsibility; they are for the most part irresponsible and need to be treated as sick people.

It would be too much to hope that Grasset would here settle the problem. He makes no claim to do so—he offers a contribution to the discussion for what it is worth—and in our opinion it is worth a great deal, and physicians and lawyers should read it, for in no field of medicine are both professions in need of more enlightenment and of more facts, from which they may form judgments that are worth anything.

The translation has been well done, and English readers are under obligations to Dr. Smith Ely Jelliffe for placing this instructive and valuable work within their reach.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

LAWS CONCERNING THE TEACHING OF HYGIENE—MEDICAL INSPECTION OF SCHOOLS.

VANCOUVER, B. C.

To the Editor:—I am preparing, for the British Columbia Medical Association, an article on the laws concerning the teaching of hygiene and also one on medical inspection of school children. Would you kindly inform me what recent articles have been published on the subject? W. D. BRYDONE JACK.

TEACHING OF HYGIENE.

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Newmayer, S. W.: Practical System of Medical Inspection with Trained Nurses Adapted for Public Schools of Large Cities, *New York Med. Jour.*, April 4, 1908; abstr. in THE JOURNAL, April 18, 1908, p. 1303.

Wyche, G.: Inspection of School Children, with Special Reference to Ear, Nose and Throat, *St. Louis Med. Rev.*, May 4, 1907.

Black, M.: The Physician in the Public School, *Colorado Med.*, September, 1907.

Törnell, M. G.: Medical Supervision of Secondary Schools in Sweden, *Med. Press and Circular*, Sept. 25, 1907; abstr. in THE JOURNAL, Oct. 26, 1907, p. 1479.

Williams, Linsly R.: A Plea for the Physical Examination of All School Children, THE JOURNAL, Nov. 16, 1907.

McMahon, J. P.: Necessity for Annual Systematic Examination of School Children's Eyes, Ears, Noses and Throats by School Teachers, *Wisconsin Med. Jour.*, December, 1907.

CHARGES AGAINST PHYSICIAN BY LAYMAN.

The secretary of a state society sends the following inquiry:

Layman A considers that he has just charges on ethical grounds against physician B. Should the board of censors of the county society, of which physician B is a member, take notice of such charges when brought by layman A and not by a physician either within or without the society?

ANSWER.—Section 2, Chapter 4, of the Standard By-laws for County Societies, under the heading of "Duties of the Board of Censors," reads:

"The board shall investigate charges preferred against a member, and report its conclusions and recommendations to the society."

Section 7, Chapter 1, reads:

"Charges against a member must be made in writing and be delivered to the secretary, who shall immediately furnish a copy to the accused and to the chairman of the board of censors."

No provision appears in these by-laws as to who may or may not prefer charges. If layman A, who considers that he has a just grievance on ethical grounds against physician B, is a reputable person and has not publicly or dishonorably discussed the grounds of his charges to the detriment of physician B, then it would seem reasonable for the censors of the county society, of which physician B is a member, to grant layman A an opportunity, should he request it, of presenting his charges and the evidence to sustain them before the board of censors, provided, of course, that physician B is properly notified of the charges and is furnished with a copy of them in advance, and that he is given an opportunity to present his side of the case.

OBERMAYER'S REAGENT.

DAVENPORT, IOWA, April 14, 1908.

To the Editor:—Will you kindly give the formula and method of application of Obermayer's reagent? A. P. DONOHOE.

ANSWER.—Obermayer's reagent consists of a solution of 2 gm. (30 grains) of ferric chlorid in a liter (one quart) of concentrated hydrochloric acid. If dry ferric chlorid is not obtainable a proportionate quantity of the official Liquor Ferri Chloridi (6 c.c. equal approximately 2 gm. of ferric chlorid) can be used.

The test for indican is performed as follows: About 10 c.c. of the urine to be examined is mixed with an equal quantity of Obermayer's reagent and shaken thoroughly; a cubic centimeter of chloroform is then added and the mixture gently agitated by lowering and raising the test tube. If indican, or more correctly indoxyl-potassium sulphate, is present in the urine, the chloroform will be colored blue. Iodids in the urine will give a violet color, but this color disappears on agitating with a solution of sodium thiosulphate.

POLYARTICULAR DEFORMING ARTHRITIS.

BUFFALO, N. D., April 13, 1908.

To the Editor:—Please let me know where I can find a good summary of Still's disease—the polyarticular deforming arthritis in children, said to be associated with glandular and splenic enlargement. S. B. CLARK.

ANSWER.—Recent works on pediatrics contain references to this disease with more or less full descriptions: Still's original description, "A Form of Chronic Joint Disease in Children," appeared in *Medico-Chirurgical Transaction*, vol. lxxx. It is quoted by Rotch, "Pediatrics," fifth edition, p. 1030. The nature of the disease is discussed by D. A. Edsall, *Archives of Pediatrics*, March, 1904, and an abstract of this article appeared in THE JOURNAL A. M. A., April 23, 1904. Edsall found indications leading him to believe that at least some cases of the affection were tuberculous. There is little doubt that it is an infectious disease. Another article on this subject by D. A. Edsall and R. S. Lawrence appeared in *American Journal of the Medical Sciences*, December, 1903.

The Public Service

Army Changes.

Memorandum of changes and stations and duties of medical officers, U. S. Army, week ending April 18, 1908:

Carswell, R. L., asst.-surgeon, left Depot of Recruits and Casuals, Angel Island, Cal., on leave of absence for two months.

Wilson, W. H., surgeon, returned to Fort Hamilton, N. Y., from accompanying troops to San Francisco.

LaGarde, L. A., deputy surgeon general, granted leave of absence for two months.

Page, Henry, Schreiner, E. R., Truby, A. E., and Ford, J. H., asst.-surgeons, ordered to report at the Army General Hospital, San Francisco, for examination for promotion.

Ashford, B. K., and Chamberlain, W. P., asst.-surgeons, ordered to report at Army Medical Museum Building, Washington, D. C., for examination for promotion.

Powell, J. L., deputy surgeon general, left Fort Ethan Allen, Vt., on leave of absence for ten days.

DeLoffre, S. M., asst.-surgeon, ordered to report at the expiration of his leave of absence at the Army Medical Museum Building, Washington, D. C., for examination for advancement.

Chamberlain, W. P., asst.-surgeon, granted leave of absence for forty days, with permission to ask extension of twenty days.

Whaley, A. M., asst.-surgeon, ordered to Jackson Barracks, La., for temporary duty; on completion to return to station.

Gunckel, G. I., dental surgeon, left Jackson Barracks, La., for duty at Fort Morgan, Ala.

Voorhies, H. G., dental surgeon, ordered to Fort Meade, S. Dak., for duty for one month; to Fort Washakie, Wyo., for duty for ten days; thence to return to his station, Fort D. A. Russell, Wyo.

Whinnery, J. C., dental surgeon, arrived at Ft. Lawton, Wash., for duty.

Craig, E. J., dental surgeon, left Ft. Robinson, Neb., for duty at Ft. Leavenworth, Kan.

McAlister, J. A., Jr., dental surgeon, left Ft. Sheridan, Ill., on leave of absence for one month.

Ames, J. R., dental surgeon, left Ft. Leavenworth, Kan., for duty for one month at Ft. Riley, Kan.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending April 18, 1908:

Chambers, W., asst.-surgeon, ordered to the naval hospital, Philadelphia.

Woodward, J. S., passed asst.-surgeon, detached from duty at the naval hospital, New York, and ordered to the *Birmingham* when commissioned.

McLean, A. D., passed asst.-surgeon, detached from the Navy Yard, Portsmouth, N. H., and ordered to the *Chester* when commissioned.

Sterne, C. F., asst.-surgeon, ordered to naval hospital, New York.

Dickson, S. H., medical inspector, detached from the Navy Yard, Norfolk, and ordered to the marine barracks, Washington, D. C.

Kite, I. W., surgeon, detached from the *Franklin* and ordered to the Navy Yard, Norfolk, Va.

Langhorne, C. D., surgeon, detached from the marine barracks, Washington, D. C., and ordered to the naval station, Honolulu, H. I., sailing from San Francisco about May 5.

Smith, C. G., passed asst.-surgeon, detached from the naval station, Honolulu, H. I., and ordered home to wait orders.

Shiffert, H. O., passed asst.-surgeon, detached from duty with marine at Camp Elliott, Isthmian Canal Zone, and ordered home to await orders.

Brown, H. L., passed asst.-surgeon, detached from the naval recruiting station, Oklahoma City, Okla., and ordered to the naval station, Cavite, P. I., sailing from San Francisco about May 5.

Leach, P., surgeon, ordered to the *Hancock*

Wheeler, W. M., surgeon, detached from the *Cleveland* and ordered home to await orders.

Ely, C. M., passed asst.-surgeon, detached from the naval recruiting station, Buffalo, N. Y., and ordered to the *Hartford* when commissioned.

McDonell, W. N., passed asst.-surgeon, detached from the *Hancock* and ordered to the naval recruiting station, Buffalo, N. Y.

Haines, B. F., acting asst.-surgeon, resignation accepted to take effect April 15, 1908.

Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending April 15, 1908:

Mead, F. W., surgeon, granted leave of absence for 10 days from April 12, 1908.

Carrington, P. M., surgeon, granted leave of absence for 4 days from April 8, 1908, under Paragraph 169, Service Regulations.

McIntosh, W. P., surgeon, directed to proceed to Boston, Mass., for special temporary duty, on completion of which to rejoin his station at Portland, Me.

Cobb, J. O., surgeon, relieved from duty at Cairo, Ill., and directed to proceed to Milwaukee, Wis., assuming charge of the service at that port.

Guiteras, G. M., surgeon, directed to proceed to Pascagoula, Miss., for special temporary duty, on completion of which to rejoin his station at Mobile, Ala.

Stimpson, W. G., surgeon, directed to assume temporary charge at Port Townsend Quarantine Station during absence of Passed Assistant Surgeon Oakley, on leave for 1 month from April 15.

Nydegger, J. A., P. A. surgeon, granted leave of absence for 2 days from April 11, 1908, under Paragraph 191, Service Regulations.

Oakley, J. H., P. A. surgeon, granted leave of absence for 1 month from April 15, 1908.

Wickes, H. W., P. A. surgeon, relieved from duty at Stapleton, N. Y., and directed to proceed to New Orleans, reporting to the medical officer in command of the marine hospital for duty and assignment to quarters.

Goldberger, Joseph, P. A., surgeon, granted leave of absence for 7 days from April 9, 1908.

Schereschewsky, J. W., P. A. surgeon, directed to report to the Bureau, Washington, D. C., for special temporary duty, on completion of which to rejoin his station in Baltimore.

Wilson, R. L., P. A. surgeon, relieved from duty at New Orleans and directed to proceed to Cairo, Ill., assuming command of the service at that port.

Jackson, J. M., acting asst.-surgeon, granted leave of absence for 10 days from April 4, 1908.

James, W. F., acting asst.-surgeon, granted leave of absence for 30 days from July 1, 1908.

Rice, W. E., acting asst.-surgeon, granted leave of absence for 14 days from May 1, 1908.

BOARD CONVENED.

A board of medical officers was convened to meet at Seattle, Wash., April 13, 1908, for the physical examination of an alien. Detail for the Board: P. A. Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin, Acting Assistant Surgeon P. R. Underwood, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 17, 1908:

SMALLPOX—UNITED STATES.

Alabama: Huntsville, vicinity, January-April, 50 cases.

California: Los Angeles, March 21-28, 7 cases, 1 death; San Francisco, 15 cases.

District of Columbia: Washington, March 28-April 4, 15 cases.

Georgia: Augusta, March 24-31, 2 cases.

Illinois: Chicago, March 21-April 28, 9 cases; Rock Island, March 21-28, 4 cases; Springfield, March 26-April 2, 5 cases.

Indiana: Elkhart, March 28-April 4, 2 cases; Evansville, March 25-April 4, 1 case; Lafayette, March 30-April 6, 1 case; Marion, March 1-31, 1 case; Muncie, Feb. 29-March 7, 4 cases.

Iowa: Cedar Rapids, March 1-31, 9 cases.

Kansas: Kansas City, March 28-April 4, 6 cases; Topeka, March 21-28, 9 cases.

Kentucky: Lewis County, March 8-April 4, 35 cases.

Louisiana: New Orleans, March 28-April 4, 15 cases (10 imported).

Maine: Limestone, April 3, 1 case (imported).

Michigan: Detroit, March 28-April 4, 1 case; Grand Rapids, 10 cases.

Minnesota: Winona, March 28-April 4, 2 cases.

Montana: Butte, March 17-24, 2 cases.

Nebraska: Nebraska City, March 28-April 4, 6 cases.

New York: Niagara Falls, March 28-April 4, 2 cases.

North Carolina: Charlotte, March 21-April 4, 2 cases.

Ohio: Cincinnati, March 20-April 3, 28 cases; Dayton, March 28-April 4, 1 case; Tippecanoe, Jan. 15-March 14, 33 cases; Toledo, March 21-April 14, 7 cases; Warren, March 28-April 4, 1 case; Zanesville, March 1-31, 1 case.

Tennessee: Nashville, March 28-April 4, 1 case.

Texas: Eagle Pass, March 31, 1 case (imported); Galveston, March 21-April 3, 2 cases; San Antonio, March 28-April 4, 12 cases.

Washington: Spokane, March 21-28, 12 cases; Tacoma, 3 cases.

Wisconsin: La Crosse, March 21-April 4, 8 cases; Manitowoc, March 21-28, 3 cases; Racine, March 28-April 4, 5 cases.

Wyoming: Laramie, March 5-April 4, 15 cases.

SMALLPOX—FOREIGN.

Arabia: Aden, March 2-9, 1 death.

Brazil: Rio de Janeiro, March 18-28, 38 cases, 23 deaths.

Canada: Halifax, March 21-April 4, 2 cases; Hamilton, March 1-31, 3 cases, 1 death.

China: Shanghai, Feb. 16-March 8, 5 cases (foreign) and 23 deaths (native).

Egypt: Cairo, Feb. 29-March 4, 4 cases, 1 death.

Formosa: Feb. 8-March 1, 5 cases, 1 death.

France: Paris, March 14-21, 6 cases.

Great Britain: Edinburgh, March 14-21, 2 cases; Leith, March 14-21, 1 case.

India: Bombay, March 3-10, 42 cases; Calcutta, Feb. 15-22, 9 cases; Madras, Feb. 29-March 6, 1 case.

Italy: General, March 19-26, 17 cases; Catania, March 19-26, 5 cases, 3 deaths.

Japan: Kobe, Feb. 29-March 7, 79 cases, 47 deaths; Nagasaki, Feb. 24-March 15, 3 cases, 1 death; Osaka, Feb. 29-March 7, 292 cases, 100 deaths.

Java: Batavia, Feb. 15-22, 4 cases.

Mexico: Aguas Calientes, March 22-29, 2 deaths; Matamoras, March 28-April 4, 4 cases; City of Mexico, Feb. 15-22, 6 deaths; Vera Cruz, March 14-21, 3 cases.

Russia: Libau, Feb. 14-21, 2 cases; Moscow, Feb. 29-March 14, 56 cases, 24 deaths; Odessa, March 14-21, 3 cases; Riga, March 17-21, 6 cases; St. Petersburg, Feb. 29-March 14, 44 cases, 11 deaths; Warsaw, Jan. 18-Feb. 1, 23 deaths.

Spain: Denia, March 14-21, 6 cases, 1 death; Valencia, March 15-22, 25 cases, 2 deaths.

Straits Settlements: Penang, Feb. 15-22, 1 case.

Turkey: Bagdad, Feb. 15-22, 42 cases, 9 deaths; Constantinople, March 8-15, 3 deaths.

YELLOW FEVER.

Barbados: Bridgtown, vicinity, March 7-11, 2 cases, 1 death.

Brazil: Para, March 7-21, 14 cases, 10 deaths.

Trinidad: Port of Spain, Feb. 29-March 7, 1 case, 1 death.

CHOLERA.

India: Bombay, March 8-10, 2 cases; Calcutta, Feb. 15-22, 112 cases; Madras, Feb. 29-March 6, 7 cases; Rangoon, Feb. 22-29, 3 cases.

PLAGUE.

Brazil: Rio de Janeiro, March 1-8, 2 deaths.

India: General, Feb. 15-22, 6,842 cases, 5,502 deaths; Bombay, March 3-10, 254 deaths; Calcutta, Feb. 15-22, 29 deaths; Rangoon, Feb. 22-29, 50 deaths.

Japan: Osaka, Feb. 29-March 7, 1 case, 1 death.

Medical Economics

LIST OF MEDICAL LIBRARIES.

The following list* of medical libraries, compiled by the Library of the New York Academy of Medicine, includes medical libraries belonging to medical societies, hospitals and medical schools. Important collections of medical books in general libraries are omitted. It is hoped to promote donations, exchanges and correspondence between physicians and medical libraries through the publication of this list. This list is preliminary and naturally incomplete. We shall be glad to receive corrections and additions to be included in a pamphlet for permanent use.

ALBANY—

New York State Medical Library, Albany, N. Y., U. S. A. Miss Ada Bunnell. 18,912.

ANN ARBOR—

Medical Library of the University of Michigan, Ann Arbor, Mich., U. S. A. Mr. Thomas W. Koch. 19,165.

ANTWERP—

Library of the Antwerp Medical Society, Antwerp, Belgium. Dr. Edouard d'Haenans. 3,000.

ATLANTA—

Library of the Atlanta Medical Library Association, Carnegie Library Building, Atlanta, Ga. ,U. S. A. Miss Rankin. 1,200.

BALTIMORE—

Library of the College of Physicians and Surgeons, Calvert and Saratoga Sts., Baltimore, Md., U. S. A. Mr. E. J. Disney. 979.

Johns Hopkins Hospital Library, North Broadway, Baltimore, Md. Miss Minnie Blogg. 8,700.

Johns Hopkins Medical School Library, Monument and Washington Sts., Baltimore, Md. Miss A. N. Gordon. 5,500.

Library of the Maryland Homeopathic Medical Society, 1130 North Mount St., Baltimore, Md. Dr. M. M. Dean. 600.

Library of the Medical Department of the University of Maryland, Baltimore, Md. Dr. Eugene F. Carroll. 7,500.

Library of the Medical and Chirurgical Faculty of Maryland, 847 North Eutaw St., Baltimore, Md. Miss Marcia C. Noyes. 17,103.

BEIRUT—

Medical Library of the Syrian Protestant College, Beirut, Syria. Rev. Harvey Porter. 1,859.

BERLIN—

Library of Kaiser Wilhelm Academy for Military Medical Training, 140 Friedrich St., Berlin, N. W., Germany. Dr. Hiller. 65,000.

Library of the Berlin Medical Society, 24 Ziegel St. (Langenbeck House), Berlin, N., Germany. Dr. Ewald. 30,000.

BIRMINGHAM—

Library of the Birmingham Medical Institute, Edmund St., Birmingham, England. T. G. Johnson. 14,200.

BOSTON—

Boston Medical Library, 8, The Fenway, Boston, Mass., U. S. A. Dr. John W. Farlow. 57,493.

Treadwell Library, Massachusetts General Hospital, Boston, Mass. Dr. James J. Minot. 6,646.

Library of the City Hospital, 878 Harrison Ave., Boston, Mass. Dr. George H. Rowe. 3,499.

Boston University Medical Library, 80 East Concord St., Boston, Mass. Dr. Anna T. Lovering. 5,000.

Library of Tufts College Medical School, 416 Huntington Ave., Boston, Mass. Dr. Robert W. Hastings. 1,800.

Library of Harvard Medical School, Longwood Ave., Boston, Mass. Miss Ida F. Underhill. 13,000.

BOURNEMOUTH—

Library of Bournemouth Medical Society, Old Christchurch Road, Bournemouth, England. Dr. Frank Belben. ——.

BRIGHTON—

Library of the Brighton and Sussex Medico-Chirurgical Society, Birghthelmstone Dispensary, Queen's Road, Brighton, England. Mr. Brill. 4,000.

BRISTOL—

Bristol Medical Library, University College, Bristol, England. Mr. C. King Rudge. 21,000.

BROOKLYN—

Library of the Medical Society of the County of Kings, 1313 Bedford Ave., Brooklyn, N. Y., U. S. A. Mr. Albert T. Huntington. 65,000.

BRUNSWICK—

Library of the Medical School of Maine, Brunswick, Maine, U. S. A. Mr. George T. Little. 4,770.

BRUSSELS—

Library of the Academy of Medicine of Belgium, Academy Building, Brussels, Belgium. Mr. Henry Beckers. 100,000.

BUDAPEST—

Library of the Royal Society of Physicians of Budapest, 21 St. Roval St., Eighth District, Budapest, Hungary. Dr. Rudolphe Temesváry. 20,528.

BUFFALO—

University of Buffalo Medical Library, 24 High St., Buffalo, N. Y., U. S. A. Dr. Irving P. Lyon. 8,000.

BURLINGTON—

Library of the College of Medicine, University of Vermont, Burlington, Vt., U. S. A. 3,000.

CALCUTTA—

Library of the Medical College of Bengal, Colutolah St., Calcutta, India. Rakhal Das Ghose. 50,000.

CANTERBURY—

Library of the East Kent and Canterbury Medical Society, Canterbury, England. Dr. Harold Wacher. 2,000.

CHELTENHAM—

Cheltenham Medical Library, Clarence St. Dr. J. Rupert Collins, 3 Columbia Place, Cheltenham, England. 2,000.

CHICAGO—

Hahnemann Medical College Library, 2817 Cottage Grove Ave., Chicago, Ill., U. S. A. Dr. A. H. Grimmer. 5,000.

The John Crerar Library (Medical Section), 87 Wabash Ave., Chicago, Ill. Mr. Clement W. Andrews. 42,000.

Northwestern University Medical School Library, 2431 Dearborn St., Chicago, Ill. Miss Margaret I. Maloney. 4,780.

Quine Library, College of Physicians and Surgeons, University of Illinois, Congress and Honore Sts., Chicago, Ill. Miss Metta M. Loomis. 12,000.

Library of Rush Medical College, University of Chicago, Chicago, Ill. Miss C. A. MacCauliff. 16,000.

CINCINNATI—

Library of the Academy of Medicine of Cincinnati, 25 East Eighth St., Cincinnati, Ohio, U. S. A. Dr. Arch I. Corson. 3,000.

Cincinnati Hospital Library, Cincinnati, Ohio. Dr. P. S. Conner. 18,000.

CLEVELAND—

Medical Library Association, 2818 Prospect Ave., Cleveland, Ohio, U. S. A. Mrs. S. M. Harding. 14,000.

Homeopathic Medical College Library, 704 Huron Road, Cleveland, Ohio, U. S. A. Dr. S. A. Young. 700.

COLORADO SPRINGS—

El Paso County Medical Society Library, Coburn Library, Colorado Springs, Colorado, U. S. A. Dr. L. S. Brown. 2,800.

DENVER—

Library of the Denver Academy of Medicine, 1434 Glenarm St., Denver, Colo., U. S. A. Dr. F. W. Kenney. 2,500.

DES MOINES—

Library of Drake University College of Medicine, 406 Center St., Des Moines, Iowa, U. S. A. Miss Eleanor Overholt. 450.

* Libraries are arranged alphabetically by cities. The name of the library is followed, in each case, by the mailing address, the name of the librarian, and the number of volumes in the library.

DUBLIN—

Library of the Royal College of Physicians of Ireland, 6 Kildare St., Dublin, Ireland. Mr. Robert Phelps. 15,000.

Library of the Royal College of Surgeons in Ireland, Stephen's Green, West, Dublin, Ireland. Dr. R. B. McCausland. 30,000.

EDINBURGH—

Library of the Royal College of Physicians of Edinburgh, 9 Queen St., Edinburgh, Scotland. Dr. D. Berry Hart. 80,000.

Library of the Royal College of Surgeons, Edinburgh, Nicholson St., Edinburgh, Scotland. Dr. Alexis Thomson. 15,000.

Library of the Royal Medical Society, Melbourne Place, Edinburgh, Scotland. Mr. A. P. Ormiston. 30,000.

FALL RIVER—

Fall River Medical Society Library, South Main St., Fall River, Mass., U. S. A. Dr. George L. Richards. 500.

FLORENCE—

Medical Library of the Scientific School, 33 Alfani St., Florence, Italy. Luigi Nobile-Lojacono. 30,000.

GALVESTON—

Library of the Medical Department, University of Texas, Galveston, Texas, U. S. A. Miss Addie Hill. 6,683.

GLASGOW—

Library of the College of Physicians and Surgeons of Glasgow, Faculty Hall, 242 St. Vincent St., Glasgow, Scotland. Mr. Alexander Duncan. 50,000.

HANOVER—

Medical Library of Dartmouth College, Hanover, New Hampshire, U. S. A. Mr. M. D. Bisbee. 3,300.

HARTFORD—

Hartford Medical Society Library, Hunt Memorial Building, 38 Prospect St., Hartford, Connecticut, U. S. A. Dr. Walter R. Steiner. 4,000.

HASTINGS—

Library of East Sussex Medico-Chirurgical Society, 16 Silchester Road, Hastings, England. Dr. Hubert Stanley. 3,000.

HAVANA—

Library of the School of Medicine of the National University, General Wood Laboratories, Havana, Cuba. Prof. José A. Valdés Anciano. 4,500.

IOWA CITY—

Medical Library of the State University of Iowa, Iowa City, Iowa, U. S. A. Mr. M. G. Wyer. 1,600.

JACKSONVILLE—

Morgan County Medical Society Library, Public Library Building, Jacksonville, Ill., U. S. A. Dr. Carl E. Black. 2,500.

JERSEY—

Library of The Jersey Medical Society, 37 David Place, St. Helier, Jersey, England. Dr. Charles A. Bois. 350.

KANSAS CITY—

Kansas City Medical Library, Public Library Building, Ninth and Locust Sts., Kansas City, Mo., U. S. A. Dr. C. B. Hardin. ———.

KINGSTON—

Queen's Medical Library, Kingston, Ontario, Canada. Dr. F. Etherington. 1,500.

KYOTO—

Medical Library of the Imperial University, University Compounds, Kyoto, Japan. Prof. Bunjiro Shima. 25,016.

LEEDS—

Library of Leeds and West Riding Medico-Chirurgical Society, Cookridge St., Leeds, England. Mr. John Merriman. 7,500.

LEICESTER—

Library of Leicester Medical Society, 3 Granby St., Leicester, England. Mr. F. S. Herne. 5,000.

LINCOLN—

Library of the Nebraska State Medical Association, University of Nebraska, Lincoln, Neb., U. S. A. Dr. H. Winnett Orr. 2,000.

LIVERPOOL—

Library of Liverpool Medical Institution, Liverpool, England. Mr. William Jones. 12,000.

LONDON—

Library of the British Medical Association, 429 Strand, London, England. Mr. Spencer Honeyman. 20,000.

Library of Charing Cross Hospital Medical School, Chandos St., Charing Cross, London, W. C., England. Mr. John Francis Pink. 5,000.

Library of London Hospital Medical College. Turner St., Mile End, London, England. Mr. Munro Scott. 5,000.

Library of the London School of Medicine for Women, 8 Hunter St., Brunswick Square, London W. C., England. Miss M. B. Douie. 5,000.

Library of the Medical Society of London, 11 Chandos St., Cavendish Square London, W., England. Mr. George Bethell. 25,000.

Library of the Royal College of Physicians of London, Pall Mall East, London, S. W. Dr. J. F. Payne. 25,000.

Library of the Royal College of Surgeons of England, Lincoln's Inn Fields, London, W. C., England. Mr. Victor G. Plarr. 60,000.

Library of the Royal Society of Medicine, 20 Hanover Square, London, W., England. Mr. Charles Richard Hewitt. 70,000.

St. Bartholomew's Hospital College Library, West Smithfield, London, E. C., England. Mr. Alfred H. Coughtrey. 14,000.

St. Thomas's Hospital Library, Lambeth Palace Road, London, England. Mr. George Rendle. 3,000.

Library of University College Hospital, University St., Gower St., London, W. C., England. Mr. F. H. M. Parker. 6,000.

Westminster Hospital Medical School Library, Caxton St., London, S. W., England. Mr. William Fryer. 2,500.

Wills Library, Guy's Hospital, St. Thomas's St., London, S. E., England. Mr. P. Mills. 7,000.

LOS ANGELES—

Barlow Medical Library, 742 Buena Vista St., Los Angeles, Cal., U. S. A. Miss Mary Williams. 10,000.

LOUISVILLE—

Jefferson County Medical Library, Room 515, Atherton Building, Louisville, Ky., U. S. A. Miss Mary A. Rademaker. 2,000.

MADRAS—

Library of Madras Medical College, Park Town, Madras, India. P. C. Swami. 4,895.

MANCHESTER—

Library of the Manchester Medical Society, the University of Manchester, Manchester, England. Mr. Cuthbert E. A. Clayton. 37,310.

MANILA—

Library of the Bureau of Science, 153 Calle Herran, Manila, Philippine Islands. Miss Mary Polk. 25,000.

MELBOURNE—

Medical Library of the University of Melbourne, Melbourne, Australia. Mr. F. Gladish. 6,000.

MILFORD—

Library of the Thurber Medical Association, Milford, Mass., U. S. A. Dr. J. M. French. 200.

MILWAUKEE—

Milwaukee Medical Society Library, Goldsmith Building, Wisconsin St., Milwaukee, Wis., U. S. A. Dr. J. D. Madison. 5,000.

MINNEAPOLIS—

Library of the Medical Department of the University of Minnesota, Minneapolis, Minn., U. S. A. Dr. Thomas G. Lee. 10,000.

Library of the Hennepin County Medical Society, City Hall, Minneapolis, Minn., U. S. A. Mrs. Carrie C. Jones. 5,000.

MONTREAL—

McGill Medical Library, Montreal, Canada. Miss M. R. Charlton. 30,000.

NEWARK—

The Medical Library Association, Public Library Building, Newark, N. J., U. S. A. Mr. John Cotton Dana. 356.

NEW HAVEN—

Library of the New Haven Medical Association, 962 Chapel St., New Haven, Conn., U. S. A. 5,000.

NEW ORLEANS—

Library of the Medical Department of Tulane University, Canal St., between Robertson and Villere Sts., New Orleans, La., U. S. A. Miss Jane Grey Rogers. 4,425.

Orleans Parish Medical Society Library, 141 Elk Place, New Orleans, La., U. S. A. Dr. Homer Dupuy. 8,000.

NEW YORK—

Library of the College of Physicians and Surgeons, 437 West Fifty-ninth St., New York City, U. S. A. (Branch of the Library of Columbia University.) James H. Canfield, Librarian. G. S. Evans, Custodian. 1,400.

Library of the New York Academy of Medicine, 17 West Forty-third St., New York City, U. S. A., Mr. John S. Brownne. 85,000.

Library of the New York Homeopathic Medical College, Sixty-third St. and Ave. A, New York City, U. S. A. Mr. William Gow. 6,500.

Library of the Rockefeller Institute for Medical Research, Sixty-sixth St. and Ave. A, New York City, U. S. A. Miss A. E. Scheidt. 4,120.

NOTTINGHAM—

Library of Nottingham Medico-Chirurgical Society, the Dispensary, Broad St., Nottingham, England. Mrs. Smithhurst. 1,000.

ORANGE—

William Pierson Memorial Library, Free Library Building, cor. Main St. and Essex Ave., Orange, N. J., U. S. A. Dr. Palmer Potter. 2,403.

PARIS—

Library of the Paris Academy of Medicine, 16 Rue Bonaparte, Paris, France. Dr. Laloy. 100,000.

Library of the Faculty of Medicine of Paris, 12 Rue de l'Ecole de Médecine, Paris, France. Dr. Louis Hahn. 175,000.

PHILADELPHIA—

Library of the Alumnæ Association of the Woman's Medical College of Pennsylvania, Philadelphia, Pa., U. S. A. Miss Henrietta Newberger. 1,500.

Library of the College of Physicians, N. E. corner of Thirteenth and Locust Sts., Philadelphia, Pa., U. S. A. Mr. Charles Perry Fisher. 84,423.

Library of the Hahnemann Medical College, Broad St., above Race St., Philadelphia, Pa., U. S. A. Dr. T. L. Bradford. 15,000.

Jefferson Medical College Library, Tenth and Walnut Sts., Philadelphia, Pa., U. S. A. Mr. Charles Frankenberger. 4,000.

Medical Library of the Pennsylvania Hospital, Eighth and Spruce Sts., Philadelphia, Pa., U. S. A. Mr. Milton M. Bergey. 15,000.

PITTSBURG—

Library of the Pittsburg Academy of Medicine, 43 Federal St., Pittsburg, Pa., U. S. A. Miss Williamina Duncan. 4,200.

PLYMOUTH—

Plymouth Medical Society Library, Athenæum Chambers, Plymouth, England. Dr. A. Bertram Soltau. 1,650.

PORTLAND—

The R. B. Wilson Library, Medical Department of the University of Oregon, Twenty-third and Lovejoy Sts., Portland, Ore., U. S. A. Mr. S. M. Kyde. 1,500.

PROVIDENCE—

Library of the Rhode Island Medical Society, Public Library Building, Washington and Greene Sts., Providence, R. I., U. S. A. Dr. George D. Hersey. 22,000.

PUEBLO—

Library of the Pueblo County Medical Society, McClelland Library, Pueblo, Colo., U. S. A. Dr. W. W. Bulette. 2,746.

QUINCY—

Quincy Medical Library Association, Fourth and Main Sts., Quincy, Ill., U. S. A. Dr. E. Zimmermann. 1,256.

READING—

Berks County Medical Society Library, 540 Walnut St., Reading, Pa., U. S. A. Dr. Frank G. Runyon. 850.

RICHMOND—

Library of the Medical College of Virginia, Richmond, Va., U. S. A. Dr. St. George T. Grinnan. 3,000.

ST. LOUIS—

St. Louis Medical Library, 3525 Pine St., St. Louis, Mo., U. S. A. Dr. Frank J. Lutz. 10,560.

ST. PAUL—

Ramsey County Medical Society Library, 260 Lowry Building, St. Paul, Minn., U. S. A. Mrs. W. J. Swartz. 5,500.

ST. PETERSBURG—

Library of the Imperial Academy of Medicine, Hospital Building, St. Petersburg, Russia. Professor Skoricenko. 170,000.

SAN FRANCISCO—

Library of the Hahnemann Medical College, Maple and Sacramento Sts., San Francisco, Cal., U. S. A. Dr. Guy E. Manning. 4,000.

Lane Medical Library, Sacramento and Webster Sts., San Francisco, Cal., U. S. A. Dr. Emmet Rixford. 33,000.

Library of the San Francisco County Medical Society, Polk and Grove Sts., San Francisco, Cal., U. S. A. Dr. August J. Lartigau. 4,000.

SHEFFIELD—

Library of the Sheffield Medico-Chirurgical Society, The University, Sheffield, England. Dr. Duncan Burgess. 3,556.

STOCKHOLM—

Caroline Institute Library, Stockholm, Sweden. Emil Haverman. 40,000.

SYRACUSE—

Library of the College of Medicine, Syracuse University, 309 Orange St., Syracuse, N. Y., U. S. A. Dr. Frank W. Marlow. 7,000.

TERRE HAUTE—

Vigo County Medical Society Library, Public Library Building, Terre Haute, Ind., U. S. A. Miss Sallie C. Hughes. 700.

TOLEDO—

Toledo Medical Library Association, Toledo, Ohio, U. S. A. Dr. C. D. Selby. 1,500.

TOPEKA—

Stormont Medical Library, State House, Topeka, Kansas, U. S. A. Mr. James L. King. 3,283.

TORONTO—

Library of the Academy of Medicine, 9 Queen's Park, Toronto, Ontario, Canada. Miss Mary Watson. 6,000.

TORQUAY—

Library of the Torquay Medical Society, Torbay Hospital, Torquay, England. The House Surgeon. 500.

UPSALA—

Library of the Medical Society at the Royal University, Upsala, Sweden. Gustafadde. 7,000.

VANCOUVER—

Library of the Vancouver Medical Association, Room 22, No. 633 Hastings St., W. Vancouver, B. C. Dr. E. C. Carder. 1,500.

WASHINGTON—

Library of the Surgeon-General's Office, Seventh and B Sts., S. W., Washington, D. C., U. S. A. Dr. Walter D. McCaw. 158,791.

Library of the U. S. Naval Medical School, Twenty-fourth and E Sts., Washington, D. C., U. S. A. Mr. S. W. French. 16,000.

WAVERLEY—

McLean Hospital Medical Library, Waverley, Mass., U. S. A. Miss E. Kathleen Jones. 4,280.

WILKES-BARRE—

Library of the Luzerne County Medical Society, Anthracite Building, Wilkes-Barre, Pa., U. S. A. Dr. Lewis H. Taylor. 4,300.

WINNIPEG—

Library of the College of Physicians and Surgeons of Manitoba, 220 McDermott St., Winnipeg, Manitoba, Canada. Miss O. Stewart. 1,200.

WORCESTER—

Worcester District Medical Library, 18 Elm St., Worcester, Mass., U. S. A. Dr. Merrick Lincoln. 8,926.

YORK, ENG.—

Library of the York Medical Society, 1 Low Ousegate, York, England. Dr. J. Ramsey. 5,000.

YORK, U. S. A.—

Library of the York County Medical Society, Court House, E. Market St., York, Pa., U. S. A. Dr. Israel H. Betz. 3,000.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Eighth Month.

TYPHOID FEVER.

First Weekly Meeting.

Anatomy of Ileum and Cecum.
Physiology of Ileum and Cecum.
Vessels, Nerves and Lymphatics.

Second Weekly Meeting.

Bacteriology.
Historical Review.
Methods of Detection.
Methods of Transmission.

Third Weekly Meeting.

Intestinal Pathology.
General Pathology.

Fourth Weekly Meeting.

Symptomatology.
Special Symptoms.
Circulatory System.
Prophylaxis.

Monthly Meeting.

Diagnosis of Typhoid Fever.
Treatment of Typhoid Fever.

FIRST WEEKLY MEETING.

Anatomy of Ileum and Cecum.

Demonstrate Fresh Specimens.

Ileum: Relations to surface. Mesentery; fixation, diameter. Structure, four coats. Serous coat. Muscular; longtitudinal and circular. Submucous; structure and contents. Mucous membrane, valvulæ conniventes few in number. Villi, structure. Crypts of Lieberkühn. Ileocecal valve; position, structure, relations, size.

Cecum: Location, diameter, types. Peritoneum, mesocecum. Appendices epiploicæ. Muscular layers. "Bands" or ligaments. Sacculi. Submucous coat. Mucous membrane. Crypts of Lieberkühn.

Physiology of Ileum and Cecum.

Digestion of proteids, carbohydrates and fats in small intestine; absorption of these elements. Difference in intestinal contents in duodenum and at ileocecal valve. Peristaltic and rhythmic movements of intestines. Effect of fever on digestion and absorption. Movements of large intestine. Bacterial action in small intestine; in large intestine.

Vessels, Nerves and Lymphatics.

Trace artery to villi, and venous return.

Trace nerve supply from origin to Auerbach's and Meissner's plexuses.

Trace lymph channels, deep and superficial sets, to thoracic duct. Mesenteric glands; number, size, location. Solitary follicles; location, size, structure. Agminated glands; size, location, number, structure.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

GEORGIA Homeopathic Board of Medical Examiners, Atlanta, May 4. Secretary, Dr. R. E. Hinman, 153 Whitehall St., Atlanta.

GEORGIA Regular Board of Medical Examiners, Capitol Building, Atlanta, May 4-5. Secretary, Dr. E. R. Anthony, Griffin.

MISSOURI State Board of Health, St. Louis and Kansas City, May 4-6. Secretary, Dr. J. A. B. Adcock, Warrensburg.

LOUISIANA Homeopathic Board of Medical Examiners, New Orleans, May 5. Secretary, Dr. Gayle Aiken, 1102 St. Charles Ave., New Orleans.

TENNESSEE State Board of Medical Examiners, Memphis, Nashville and Knoxville, May 5. Secretary, Dr. T. J. Happel, Trenton.

MISSISSIPPI State Board of Health, State Capitol, Jackson, May 12. Secretary, Dr. J. F. Hunter, Jackson.

ILLINOIS State Board of Health, City Hall, East St. Louis, May 12-14. Secretary, Dr. J. A. Egan, Springfield.

MASSACHUSETTS State Board of Registration in Medicine, State House, Boston, May 12-14. Secretary, Dr. Edwin B. Harvey, Room 159, State House, Boston.

NORTH CAROLINA State Board of Medical Examiners, Winston-Salem, May 19. Secretary, Dr. G. T. Sikes, Grissom.

NEW YORK State Board of Medical Examiners, Albany, May 19-22. Chief of Examinations Division, Charles F. Wheelock, Albany.

LOUISIANA State Board of Medical Examiners, New Orleans, May 21-22. Secretary, Dr. Felix A. Larue, 211 Camp St., New Orleans.

INDIANA Board of Medical Registration and Examination, Indianapolis, May 26-28. Secretary, Dr. W. T. Gott, 120 State House, Indianapolis.

NEBRASKA State Board of Health, State Capitol, Lincoln, May 27-29. Secretary, Dr. E. J. C. Sward, Oakland.

American Medical Training.

The following editorial, under the above title, appeared in the Chicago *Tribune*, April 15, just after the conference of the Council on Medical Education:

"Medical training in the United States is being steadily improved. That was brought out clearly in the annual conference of the American Medical Association. The advances of a decade are notable. The desire for further improvement is evident. The leaders in the profession are anxious to make the medical schools of this country equal with the best in the world.

"These things are full of encouragement. There has been a large amount of criticism of American methods. The short course leading to a degree has been ridiculed. The line between diploma venders and the officials of some schools has been a shadowy one. Doctors have been turned out in large numbers without the fundamental education requisite to success. Some of them have discovered the fact and are now doing well in other lines of activity. Plenty of others, unfortunately, still attempt to practice on their fellow-men.

"The quacks and charlatans will continue to flourish. State regulations will make their operations more and more difficult, but their field is a wide one. There will be honest physicians who will try to succeed despite the handicap of a lack of necessary training. But, more pleasing to contemplate, there will be a larger number of men able to strive for the highest achievements because of the best possible education in American schools.

"The United States is said to have about 48 per cent. of the medical schools of the world. Some of these already rank among the best institutions of their kind. The deficiency noted after comparison with instruction in Europe is in the requirements for premedical study and in the length of time spent in working toward a degree.

"The hopeful feature of the situation is the progress that has been made during the last decade and the general feeling among the leaders of the profession that this advance movement must be continued. If the physicians were satisfied the outlook for medical instruction in the United States would not be encouraging. It is the determination manifested on every hand to go forward that is gratifying.

"There are many problems yet unsettled. Large endowments are needed for their solution. The accomplishments of recent years in connection with various ills of humanity have been marvelous. The aggressive and earnest physicians are optimists who look for still greater achievements in the early future. To train men for the best service to their fellows is a noble work. The improvement in medical instruction already noted is an earnest of what will surely come under the leadership of brilliant members of the profession who intend to leave nothing undone to secure for Americans in America as good training in medicine as can be found anywhere in the world."

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 2-5.

Arizona Medical Association, Tucson, April 28-29.
Med. Assn. of District of Columbia, Washington, April 28.
Med. and Chir. Faculty of Maryland, Baltimore, April 28-30.
Kansas Medical Society, Iola, May 5-7.
Ohio State Medical Association, Columbus, May 6-8.
American Therapeutic Society, Philadelphia, May 7-9.
American Association of Physicians, Washington, May 12-13.
State Medical Association of Texas, Corpus Christi, May 12.
Utah State Medical Association, Salt Lake, May 12-13.
Louisiana State Medical Society, Alexandria, May 12-14.
Montana State Medical Association, Butte, May 13-14.
Arkansas Medical Society, Little Rock, May 13-15.
New Hampshire Medical Society, Concord, May 14-15.
Oklahoma State Medical Association, Sulphur, May 14-16.
Illinois State Medical Society, Peoria, May 19-21.
Missouri State Medical Association, Springfield, May 19-21.
Nebraska State Medical Association, Lincoln, May 19-21.
North Dakota State Medical Association, Grand Forks, May 20-21.
Iowa State Medical Society, Des Moines, May 20-22.
American Orthopedic Association, Chicago, June 4-6, 1908.

TENNESSEE STATE MEDICAL ASSOCIATION.

Seventy-fifth Annual Meeting, held at Knoxville, April 14-16, 1908.

The President, DR. A. B. COOKE, Nashville, in the Chair.

The association met in the Circuit Court room of the Court House.

Addresses of welcome were delivered by Hon. John M. Brooks, mayor of Knoxville, on behalf of the city, and by Dr. H. H. McCampbell on behalf of the Knox County Medical Society, which were responded to by Dr. W. D. Haggard, Nashville.

Will Establish a Monthly Journal.

One of the most important items of business transacted by the house of delegates was the decision to establish a monthly medical journal in which to publish the proceedings of the association, the vote being 30 in favor of such an undertaking and 6 against it.

Officers Elected.

The following officers were elected: President, Dr. B. D. Bosworth, Knoxville; vice-president for east Tennessee, Dr. C. T. Carroll, Cleveland; vice-president for middle Tennessee, Dr. J. W. Brandau, Clarksville; vice-president for west Tennessee, Dr. W. T. Blanton, Union City; secretary, Dr. George H. Price, Nashville; treasurer, Dr. W. C. Bilbro, Murfreesboro; delegates to American Medical Association, Dr. S. W. Woodyard, Greenville; alternate, Dr. George R. West, Chattanooga, for 1908; for 1908-9, Dr. S. S. Crockett, Nashville; alternate, Dr. K. S. Howlett, Franklin. Next place of meeting, Nashville; time, April 13-15, 1909.

Medical Organization; Its Purposes and Possibilities.

PRESIDENT COOKE, in selecting this subject for his address, and in quoting from the constitution, said that the purposes of the association are to federate and bring into "one compact organization the entire medical profession of the state of Tennessee and to unite with similar associations in other states to form the American Medical Association, with a view to the extension of medical knowledge and the advancement of medical science, to the elevation of the standard of medical education and to the enactment and enforcement of just medical laws, to the promotion of friendly intercourse among physicians and to the guarding and fostering of their material interests, and to the enlightenment and direction of public opinion in regard to the great problems of state medicine, so that the profession shall become more capable and honorable within itself and more useful to the public in the prevention and cure of disease and in prolonging and adding comfort to life." No more inspiring declaration of principles could be formulated, he said, nor can any fair-minded man refuse to concede their nobility of conception and beneficence of intention.

As to the possibilities of medical organization, the present scheme of reorganization is only six years old, and yet in that short time the advantages which have been realized are so positive and definite that the promise for the future seems bright. To those who believe in the soundness and equity of a representative form of government the plan whereby the county society is made the unit of organization must commend itself as both wise and just. The great underlying purpose of all medical organization is to reach the individual physician, to cause him to realize that he has other responsibilities and duties than those which pertain to his immediate clientele, to broaden his mental vision, to awaken him to the fact that association with his fellows will enable him to mold public opinion and wield an influence in the affairs of men which are not possible in any other way. Systematic effort to reach the individual physician and induce him to affiliate with his local society, and in the possibilities embraced in such affiliation, he finds one of the strongest defenses of the present scheme of organization.

Laceration of the Perineum.

DR. C. E. RISTINE, Knoxville, read a paper on this subject in which he described the basic principle of a new operation for secondary repair of complete perineal laceration.

Ophthalmia Neonatorum as a Sociologic Problem.

DR. HILLIARD WOOD, Nashville, referred to the prevalence of ophthalmia neonatorum before the introduction of Credé's prophylaxis and its reduction by the judicious use of a solution of silver. The percentage of blind in the Tennessee School for the Blind from this disease was referred to, and the author emphasized the necessity for a more determined effort to prevent blindness from this cause.

DISCUSSION.

DR. M. M. CULLOM, Nashville, said the method of using solutions of silver was simple, and could be employed by any practitioner, and the use of these silver salts, whether nitrate of silver or the newer salts, should be a routine measure.

DR. LOUIS LEROY, Nashville, said when the disease is once established there is infiltration of the deeper layers of the cornea by the gonococcus. When the child is just born, however, there is no infiltration of the corneal tissues. The gonococci are present on the surface, and for that reason nitrate of silver will kill them as effectively as any of the other preparations.

DR. S. S. CROCKETT, Nashville, has not been able to determine always when there is purulent infection of the eyes, and while he has been practicing medicine for many years and has done considerable obstetric work, he has never seen a case of ophthalmia neonatorum. He doubts very much whether every practitioner doing obstetric work can be induced to use nitrate of silver in the eyes of every baby that is born. He doubts its practicability.

DR. JERE L. CROOK, Jackson, thinks the members should place themselves on record as favoring, advocating and personally practicing the instillation of a 2 per cent. solution of nitrate of silver as recommended by Credé in every case, going on the principle that every eye is believed to be infected.

DR. A. F. RICHARDS, Sparta, agreed with Dr. Leroy as to the preference for nitrate of silver solution to the other salts for the reason given by Dr. Leroy.

DR. CHARLES P. MCNABB, Knoxville, believes that if practitioners would wash the eyelids and eyelashes of babies with sterile water there would be less ophthalmia. A 2 per cent. solution of nitrate of silver does not kill the pyogenic bacteria.

DR. G. E. VAUGHAN, Clarksville, spoke of regulating the practice of midwives, saying they were the cause of most of the cases of ophthalmia neonatorum.

DR. G. M. BURDETTE, Lenoir City, has not had more than one case of ophthalmia neonatorum in his practice, which has extended over thirty years. The case was treated with nitrate of silver and it took about six weeks to get rid of the infection. He uses sterile water invariably in washing the eyes. He can not support the indiscriminate use of nitrate of silver solution.

Obstruction of the Ureter.

DR. M. C. MCGANNON, Nashville, described an interesting case of obstruction of the ureter and an operation which he performed for its relief.

Colic.

DR. W. J. BREEDING, Ravenscroft, in a paper on this subject said, among other things, if the profession would only realize that at least 90 pathologic causes of colic requiring only medical treatment may exist within the abdominal cavity, and that over 100 serious surgical causes may find expression in colic, it would certainly deliberate long before observing symptoms by an early resort to the preparations of opium.

DISCUSSION.

DR. GEORGE R. WEST, Chattanooga, follows the Wyeth method in treating the stump of the appendix. He mentioned a case in which jaundice occurred several times as the result of a post-cecal abscess due to a long-standing appendicitis in which the appendix was adherent.

DR. LOUIS LEROY referred to colics of nervous origin and those associated with hysteria, classed vaguely with the ovarian colics. He also mentioned colics due to the habitual use of morphin.

DR. JERE L. CROOK spoke of the simplicity of the Dawbarn method in treating the stump of the appendix.

DR. A. G. KYLE resorts to the Dawbarn operation where he has a soft appendix to deal with. The Dawbarn method of dealing with the appendiceal stump is simple.

DR. M. C. MCGANNON said that tabes dorsalis produces pain about the abdomen which may be mistaken for gall-bladder trouble or appendicitis. Jaundice as a symptom of appendicitis is very rare. There must be some other condition than appendicitis to produce jaundice.

(To be continued.)

Marriages

REGINALD D. WEST, M.D., to Miss Violette La Fleur, at Baltimore, April 9.

EDGAR F. KISER, M.D., Indianapolis, to Miss Cleone Hene of Muncie, Ind., April 14.

JOSEPH WEINSTEIN, M.D., to Miss Rive Kaplan, both of New York City, April 7.

ROBERT R. BLACK, M.D., Mansfield, Ohio, to Miss Harriet Moore, of Ashland, Ohio, April 5.

WILLIAM JOSEPH J. DALY, M.D., Boston, to Miss Marguerite Sterling Gallagher, of Chicago, April 21.

WILLIAM B. SAVAGE, M.D., East Islip, N. Y., to Miss Adele L. Ingersoll, of New York City, April 11.

WILLIAM H. VOGT, M.D., St. Louis, Mo., to Miss Edna Jeanette Nichols, of New York City, April 8.

THOMAS G. NELAN, M.D., East End, Pittsburg, to Miss Ora L. Boyde, of Martin's Ferry, Ohio, March 25.

NATHANIEL CURTIS ROGERS, M.D., Rockford, Ill., to Miss Florence Marie Williams, of Chicago, April 25.

CHARLES EDWARD PEARSON, M.D., New Brighton, Staten Island, N. Y., to Miss Edith Marks, of Chicago, April 20.

Deaths

Joseph Goodwin Rogers, M.D. Bellevue Hospital Medical College, New York City, 1864; acting assistant surgeon in the Army during the Civil War; professor of materia medica and therapeutics in the Indiana College of Physicians and Surgeons, 1875; superintendent of the Indiana Hospital for Insane, Indianapolis, from 1879 to 1883, when he was placed in charge of the construction of the three additional state hospitals for the insane at Logansport, Richmond and Evansville; Medical Superintendent of the Northern Indiana Hospital, Longcliff, Logansport, from 1888 until his death; author of the Indiana law for the care of insane; a member of the American Association for the Advancement of Science and in 1900 president of the American Medico-Psychological Association; an authority on hospital construction, psychiatry and general medicine, died at "Longcliff," April 11, from uremia, after a long illness, aged 67.

David LaCount, M.D. Rush Medical College, Chicago, 1856; a member of the American Medical Association; assistant surgeon of the Fourteenth Wisconsin Volunteer Infantry during the Civil War; first president of the Marathon County (Wis.) Medical Society; first physician to the Marathon County Insane Asylum; a member of the local board of pension examining surgeons, and local surgeon for the Chicago, Milwaukee & St. Paul and Chicago & Northwestern railways; died at the home of his daughter in Wausau, April 12, from cancer of the sigmoid flexure, after an illness of seven years, aged 79.

Joseph E. Clagett, M.D. Winchester (Va.) Medical College, 1851; a member of the Medical and Chirurgical Faculty of Maryland, and Baltimore Academy of Medicine; professor of materia medica from 1867 to 1873, and of obstetrics from 1873 to 1877 in the Washington University School of Medicine, Baltimore; surgeon in the Confederate service during the Civil War; for more than 40 years surgeon of the Baltimore & Ohio Railroad; died at his home in Baltimore, April 4, from cerebral hemorrhage, after a prolonged illness, aged 77.

Arthur Melvin Lee, M.D. Medical Department, University of Nashville, Tenn., 1878; a member of the Illinois State and Jackson County medical societies; a veteran of the Civil War; surgeon to the Southern Illinois penitentiary, Chester, for three years; a member of the legislature in 1896; and at various times a member of boards of pension examining surgeons; died at his home in Carbondale, April 2, from influenza, after an illness of two months, aged 68.

Samuel J. Rouse, M.D. Pennsylvania Medical College, Gettysburg, 1851; a member of the Medical Society of the State of Pennsylvania and founder of the York County Medical Society; coroner of York County and physician to county poor house for more than 12 years; surgeon of the United States Hospital at York during the Civil War; secretary of the school board for 12 years; died at his home in York, April 8, from pneumonia, aged 78.

Otho Evans, M.D. Western Reserve University Medical College, Cleveland, Ohio, 1856; a member of the American Medical Association; surgeon in the army during the Civil War; president of the First Councilor District Medical Society in 1878; for more than fifteen years president or treasurer of the school board of Franklin, Ohio, died at home in that town, where he had practiced for more than fifty years, April 12, aged 75.

Joseph Bernard Tanner, M.D. University of Southern California College of Medicine, Los Angeles, 1902; a member of the Medical Society of the State of California and Los Angeles Medical Society; for two years assistant superintendent of the Los Angeles County Hospital; assistant police surgeon of Los Angeles, was drowned in the surf while on a fishing trip near Santa Cruz Island, April 1, aged 30.

Charles Selden, M.D. Medical College of Virginia, Richmond, 1861; chief surgeon of the Second Virginia Division in the Confederate service during the Civil War; died at his home in Hampton, Va., "between the hours of 10:30 a. m., April 2, and 8 a. m., April 4, by reason of asphyxiation by gas escaping from the open cock of a gas stove in his bed room, left open with suicidal intent," aged 69.

Edwin Goodman, M.D. Trinity Medical College, Toronto, Ont., 1865; M. C. P. & S. Ont., 1866; surgeon to the Nineteenth Regiment in the Fenian raid; mayor in 1891-1892; chairman of the local board of health for 11 years; honorary president of the Ontario Tuberculosis Society; for 20 years coroner of Lincoln County; died April 9, at his home in St. Catherine's, Ont., aged 74.

Stephen H. Clizbe, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1868; a member of the Michigan State and Branch County medical societies; for several terms president of the Tri-state Medical Association of Michigan, Ohio and Indiana; died at his home in Coldwater, April 7, from diabetes, after a prolonged illness, aged 63.

Alexander Byrd McDowell, M.D. George Washington University, Department of Medicine, Washington, 1891; a member of the American Medical Association; for a time surgeon in the U. S. Marine Corps; died at his home in New York City, April 15, from the effects of incised wounds of the throat, said to have been self-inflicted, with suicidal intent, aged 35.

George Armstrong Linn, M.D. Jefferson Medical College, Philadelphia, 1869; a member of the American Medical Association; one of the oldest practitioners of Washington County, Pa.; a veteran of the Civil War, and one of the founders and a trustee of the Monongahela City Memorial Hospital; died at his home in Monongahela City, April 5, aged 76.

Silas M. Catchings, M.D. Medical Department of the University of Tennessee, Nashville, 1891; of Siwel, Miss.; a mem-

ber of the Mississippi State Medical Association and Hinds County Medical Society; died at the home of his father in Jackson, Miss., April 6, from cerebral hemorrhage, after an illness of several months, aged 40.

David Kellar, M.D. University of Louisville (Ky.) Medical Department, 1841; chief surgeon of General Buford's brigade and Gen. John Morgan's division, in the Confederate service, during the Civil War, died at the home of his daughter in Lexington, Ky., April 9, from senile debility, after a gradual decline of four months, aged 88.

Joseph Wareham Jay, M.D. Eclectic Medical Institute, Cincinnati; one of the most prominent dentists of Richmond, Ind., and at one time president of the State and Eastern Indiana dental associations; died at his home, Dec. 9, 1907, from debility following mastoid disease, after an illness of five and a half days, aged 82.

Joseph H. Mack, M.D. Eclectic Medical Institute, Cincinnati, 1863; for 50 years a resident of Madison County, Iowa; hospital steward during the Civil War; a member of the Twenty-third Iowa General Assembly; founder of Macksburg; died at his home in that city, March 16, from diabetes, after an illness of several years, aged 70.

George E. Thompson, M.D. Medical School of Harvard University, Boston, 1884; a member of the American Medical Association, American Academy of Medicine, and Boston Society for Medical Improvement; visiting physician to St. Elizabeth's Hospital; died at his home in Boston, April 11, after a short illness, aged 58.

Isaac Howard McKinley, M.D. Hospital College of Medicine, Medical Department, Central University of Kentucky, Louisville, 1879; a member of the American Medical Association and the Kentucky Valley Medical Society; died suddenly in his office in Winchester, Ky., April 14, from angina pectoris, aged 66.

Edward H. Skipwith, M.D. Medical Department of the Tulane University of Louisiana, New Orleans; for fifteen years a practitioner of Las Vegas, N. M., and for ten years at Roswell, N. M., died at El Paso, Texas, January 4, from pneumonia, after an illness of two weeks, aged about 70.

George H. Herbert (Examination, Utah, 1893), a member of the Utah State Medical Association and Sevier County Medical Society; physician of Sevier County and of Richfield for eight years, and registrar of vital statistics; died at his home in Richfield, April 8, after a long illness, aged 61.

Catherine Maloney Kennedy, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1873; of Springfield, Mass.; a member of the Massachusetts and Hampden District medical societies; died at Mercy Hospital, Springfield, April 10, from rheumatism, after a long illness, aged 63.

Kirby S. Mellinger, M.D. Western Pennsylvania Medical College, Pittsburg, 1904; formerly of New Salem, Pa.; a member of the Medical Society of the State of Pennsylvania and Fayette County Medical Society, died at his home in Perryopolis, April 9, from typhoid fever, aged 33.

Arbaces Cushman, M.D. Jefferson Medical College, Philadelphia, 1869; a member of the American Medical Association and the Æsculapian Society of the Wabash Valley; a veteran of the Civil War; died April 8, at his home in Grayville, Ind., from chronic malaria, aged 68.

William H. Bagwell, M.D. College of Physicians and Surgeons, Baltimore, 1883; a member of the Medical Society of the State of North Carolina and the Pitt County Medical Society; died at his home in Greenville, April 7, after an illness of only a few days, aged 44.

Thomas W. Bothwell, M.D. University of Georgia, Medical Department, Augusta, 1873; a member of the Florida Medical Association and Suwanee County Medical Society; died at his home in Wellborn, April 3, after an illness of two months, aged 45.

George Philip Westland, M.D. New York Homeopathic Medical College and Hospital, New York City, 1868; M. C. P. & S., Ontario, 1869; died at his home in London, Ontario, April 7, from cerebral hemorrhage, after a short illness, aged 72.

William E. Kunkle, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1878; of Newberry, Williamsport, Pa.; died at his home in that city from cerebral hemorrhage, April 5, after an illness of twenty-four hours, aged 70.

Amasa A. Macwithey, M.D. New York University Medical College, New York City, 1843; of Pompton Plains, N. J.; a member of the Medical Society of New Jersey and Morris County Medical Society; died January 6.

William H. Boston (Years of Practice, Ky., 1893); for 40 years a practitioner of Daviess County, Ky.; a veteran of the Civil War; died at his home in Owensboro, April 6, after an illness of about three months, aged 76.

George Bucher Taylor, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1885; died at his home in Towanda, Pa., March 31, from cerebral hemorrhage, after an invalidism of several years, aged 45.

David Dixon Davis, M.D. Jefferson Medical College, Philadelphia, 1889; at one time a soldier in the United States Army; died at his home in Mount Carmel, Pa., April 2, after an illness of one week, aged 42.

Harry Paul Brockett, M.D. Kansas Medical College of Topeka, 1906; of Mayetta, Kan.; died in Christ's Hospital, Topeka, March 30, from peritonitis, following an attack of appendicitis, aged 24.

Charles M. Boone, M.D. National Medical University, Chicago, 1896; of Guernsey, Iowa; died at Mercy Hospital, Cedar Rapids, Iowa, March 26, from erysipelas, after an illness of eight days, aged 43.

Willis B. Wilson (License Ind., 1897), for more than fifty years a practitioner of Rolling Prairie, Ind., and a member of the Laporte County pension examining board, died at his home, April 6, aged 79.

Robert Q. Haggerty, M.D. Indiana Medical College, Indianapolis, 1874; a member of the American Medical Association; died suddenly at his home in Elkhart, Ind., April 8, from heart disease, aged 54.

John A. Young, M.D. Medical College of Virginia, Richmond, 1875; of Denbigh and Menchville, Warrick County, Va., died suddenly at his home in Denbigh, April 10, from acute gastritis, aged 54.

Richard Coughlan, M.D. Faculty of Medicine of Queen's University (Royal College of Physicians and Surgeons), Kingston, Ont., 1881; died at his home in Hastings, Ont., February 29, aged 48.

R. C. Washburn, M.D. University of Louisville, Medical Department, about 1856; died at his home in Greensboro, N. C., Nov. 28, 1907, from gangrene, after an illness of eight days, aged 78.

James H. Stebbins, M.D. American Medical College (Eclectic), Cincinnati, Ohio, 1854; died at his home in Geneva, N. Y., April 8, from heart disease, after an illness of two days, aged 74.

John Wilcox Peaker, M.D. Toronto University Medical Faculty, 1886; died at his home in Toronto, April 5, from rheumatic endocarditis, after an illness of two weeks, aged 43.

Francis M. Daily, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1878, died at his home in Millhousen, Ind., April 6, after an illness of several months, aged 64.

Corydon T. Grover, M.D. Charity Hospital Medical College, Cleveland, 1868; died recently at his home in Orwell, Ohio, and was buried April 1 in Windsor, Ohio.

Benjamin Van Meter, M.D. Long Island College Hospital, Brooklyn, N. Y., 1872; a practitioner of Parsons, Kan., for thirty-four years, died April 10

John B. Laing, M.D. Detroit (Mich.) Medical College, 1870; died at his home in Otisville, Mich., April 6, from nephritis, after a long illness, aged 62.

Warren C. Westlake (License, N. J., 1875); a dentist of Rahway, N. J., died at the Alexian Brothers' Hospital, Elizabeth, N. J., April 7, aged 60.

Arthur B. Cossaart, M.D. New York Homeopathic College and Hospital, New York City, 1869, died at his home in New York City, recently, aged 62.

Hugh P. Lewis, M.D. Castleton (Vt.) Medical College, 1845; a pioneer practitioner of Pike County, Mo.; died at his home in Curryville, March 30.

Elmer M. Packard (License, N. J., 1900), a veteran dentist of Atlantic City, died suddenly April 8, at his home, from pneumonia.

Charles Wilbur Carrier, M.D. Chicago Homeopathic Medical College, 1877; died at his home in Desplaines, Ill., April 16, aged 58.

George Blake Galer, M.D. Rush Medical College, Chicago, 1872; died at his home in Belmond, Iowa, March 20, aged 81.

Francis H. Kelly, M.D. Gross Medical College, Denver, Colo., 1889; died at his home in Chicago, April 9.

Death Abroad.

J. Mierzejewsky, M.D., until 1893 professor of nervous and mental diseases at the University of St. Petersburg, founder and editor of the Russian *Journal for Neuropathology and Psychiatry*, died from a sudden attack of hemiplegia at Paris, aged 69.

Medicolegal

Damages for Loss of Two Fingers.

The Supreme Court of Washington says that in the case of Barclay vs. Puget Sound Lumber Company, in which the plaintiff suffered the loss of the two front fingers on his right hand, the verdict for $5,000 was so far excessive as to lead to the conclusion that it was given under the influence of prejudice. A verdict for one-half that sum, the court thinks, would fully compensate for the injuries suffered.

Rule for Measuring Value of Life.

The Supreme Court of Florida says, in Jacksonville Electric Company vs. Bowden, that, in the nature of things, an exact and uniform rule for measuring the value of the life of a deceased person to designated beneficiaries or to his estate is not practicable if possible. The elements which enter into the value of a life to the estate of a deceased person are so various and contingent that they must be left, under proper instructions from the court, to the determination of the jury, based on proper testimony applicable to the particular case. The jury have no arbitrary discretion; but among other proper elements they may consider evidence as to the age, probable duration of life, habits of industry, means, business, earnings, health, and skill of the deceased, and his reasonable future expectations.

Communications to Physicians in Other States Not Privileged.

The Supreme Court of Colorado holds, in Colorado Springs & Interurban Railway Company vs. Fogelsong, that the statute of Colorado which provides that "a physician or surgeon, duly authorized to practice his profession under the laws of this state, shall not, without the consent of his patient, be examined as to any information acquired in attending the patient, which was necessary to enable him to prescribe or act for the patient," does not apply to physicians practicing outside of Colorado, and not authorized or licensed to practice under the laws of Colorado, and did not in this case render the affidavits or the testimony of certain Missouri physicians incompetent.

Evidence of Non-Experts Equally Competent as That of Experts on Sanity.

The Supreme Court of Idaho holds, in the case of Weber vs. Della Mountain Mining Company, that in a case where the gist of the action is the sanity or competency of a person to transact business at a given time, it is error to exclude the evidence, opinions and statements of witnesses who were acquainted with the alleged insane person for many years, and who were familiar with his actions and conduct, and who saw him at the time of the transaction in question. The evidence of a layman or non-expert witness is equally as competent and admissible as the evidence of an expert witness on the question of the sanity of a person or his incompetency to transact business at any given time or in any given manner. A layman or non-expert witness may be as able and competent as an expert to make clear mental comparisons between the acts and conduct of a man who was at one time sane, sound and competent, and at another time incompetent, or laboring under mental disability or partial or total insanity.

The court says that it is too well settled law to require consideration or discussion here that the competency or incompetency, sanity or insanity, of a person at the time of a given transaction may be proven by laymen or non-expert witnesses with equal certainty, and often greater satisfaction than by experts, and the fact that a witness who has been acquainted with the person and has seen him frequently, and has been familiar with all his transactions, and has had business dealings with him, is himself not an expert on the subject of insanity, and is not versed in the medical science or has had no training or education along those lines, is no reason whatever for excluding his evidence on a question of common, everyday observation. Kelly vs. Perrault, 5 Idaho, 221; heirs of Clark vs. Ellis, 9 Or. 128; in re Christiansen's estate, 17 Utah, 42; People vs. Wreden, 59 Cal. 394; Armstrong vs. State, 30 Fla. 200.

Admissibility of Proof of Health More Than Five Years Before Injury.

The Kansas City Court of Appeals says that in the case of Partello vs. Missouri Pacific Railway Company, an action brought by a husband to recover damages resulting to him from personal injuries sustained by his wife in consequence of the alleged negligence of the defendant, the question was raised whether evidence relating to the condition of health and vigor of the plaintiff's wife which existed more than five years from the date of the injury had a direct or remote bearing on the issue of the extent of the injuries and their result on the wife's health. All of the plaintiff's witnesses depicted her as a woman of untiring energy, joyous spirits, and apparently in perfect health. After her injury she was a helpless invalid, unable to walk even the shortest distance without assistance, and exhibited all the indications of serious nervous disorder.

On the other hand, the defendant introduced a medical expert who testified from an examination made by him shortly after her injury, that he discovered that the wife's womb was greatly enlarged, from some cause which must have antedated her injury, and, further, that it was disclosed that some years before the injury she suffered in childbirth from a severe laceration of the perineum which failed to heal properly, and for which surgeons operated on her while she was in the hospital undergoing treatment for her injuries. This evidence was offered for the purpose of showing that the condition of ill health in which the plaintiff's wife was at the time of the trial was due, not wholly to the injuries received in the collision, but to other causes which preceded that occurrence, and which must have impressed her physical appearance with the marks of ill health.

Facing a controversy of this character, it not only was material, but the court thinks very important, for the plaintiff to show that his wife, even from girlhood to the hour of her injury was robust, vigorous, and to all appearances in perfect health. The court recognizes the fact that in a far shorter period than five years a person's condition of health may be entirely changed; but evidence which tends to show that one is endowed by nature with certain marked physical characteristics such as strength, high spirits and freedom from illness, when accompanied by evidence that such condition has obtained to the time of an injury, has a direct evidentiary bearing on the question of whether or not physical impairment and ill health immediately following was caused by the injury.

Had the defendant offered to show by witnesses that during the period covered by the observation of one of the plaintiff's witnesses that the plaintiff's wife had borne the appearance and acted in the manner of a person in bad health and had followed this up with evidence that such condition continued up to the date of the injury, it was very clear that such evidence would have been admissible on the ground that it would have a strong and direct relation to the real cause of the physical impairment and disorder under which it was conceded she was suffering at the time of the trial.

The facts in question were not remote in an evidentiary sense, and it was proper for the trial judge to receive them in evidence.

Admissibility of Testimony of Physicians Based on Subjective Examinations.

The St. Louis Court of Appeals says that complaint was made, in the personal injury case of Gibler vs. Quincy, Omaha & Kansas City Railroad Company, of a ruling permitting certain physicians to give testimony regarding the condition the plaintiff was in at the time of the trial, based on a subjective examination; that is to say, on the plaintiff's statement of symptoms then existing and the history of the case he gave. The opinion of one physician was given, not only on the information derived from the plaintiff, but on the appearance

of pain exhibited by the plaintiff in moving his arm The testimony of the other physician referred to was based on the knowledge of the case acquired in treating it, and also on the examination conducted during the trial. In so far as it was based on the latter, it contained only the statement that the plaintiff would need a long rest and good treatment to recover permanently. In strictness the objection stated was hardly applicable to the testimony of either of the physicians. But if the first witness could form no opinion of the plaintiff's present state without considering the history of the case and prior symptoms as related by the plaintiff, then his opinion was incompetent evidence.

The rule of law involved in the exception to this expert testimony is examined with discrimination and care in that well-tested repository of sound law—1 Greenleaf on Evidence (16th Ed.), section 162. The rule stated in this treatise, and accepted by most courts, if not all, is that a physician may give in evidence his expert opinion of the condition of a patient, founded on his observation or on the patient's statement of present subjective symptoms, or both, and, in giving his opinion, the physician may testify not only of what he observed, but what the patient told him about present symptoms. But admissible statements of symptoms by the patient are those relating to present symptoms and not such as are in the nature of a narrative of his past condition.

In other words, a physician can not repeat in testimony the history of the case given him by the patient during the examination; neither in Missouri can a physician testify to an expert opinion, based on a narrative of what has transpired in the past in the case.

A leading authority on the subject wherein the law is expounded as this court has stated it in Insurance Co. vs. Mosely, 8 Wall. (U. S.) 397. The question was considered, and many decisions reviewed in Hollaway vs. Kansas City, 184 Mo. 19, wherein it was ruled the statements of a litigant to a physician about the litigant's past physical condition were mere hearsay, and the physician could not even consider them in giving his opinion about the party's physical state at the time of the trial. It follows from this authority that no testimony should be received regarding what the plaintiff said to the physicians concerning his past suffering, and neither should an expert opinion be received in evidence, if it is based on a history of the case related by the plaintiff.

It was proper for a physician to state on the witness stand his opinion, based on what the plaintiff said about the pain he felt at the time of examination, and in connection therewith report the plaintiff's statements that he (the plaintiff) suffered pain in moving his arm at the time the examination occurred. What the witness testified was this: "Judging from the pain he (the plaintiff) says he has, I would say the deltoid muscle was injured, probably torn loose, and that the triceps was injured to a certain extent—slightly damaged." According to the above authorities, said testimony was competent.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

April 11.

1 Diabetes and the Food Factor. H. S. Stark, New York.
2 Spontaneous Gangrene of the Foot Due to Endarteritis Obliterans. I. Levin, New York.
3 *Relation of Appendicitis to Gynecologic Pelvic Diseases. S. W. Bandler, New York.
4 Blood Pressure in the Practice of Medicine. W. F. Dutton, Pittsburg, Pa.
5 *Health of Our High School Children. E. Jarrett, New York.
6 Solution of the Lodge and Society Problem on the East Side. J. Weiss, New York.
7 Case of Cut Throat. C. I. Page, Litchfield, Conn.

3. Appendicitis and Gynecologic Pelvic Disease.—Bandler summarizes his conclusions as follows: 1. Appendicitis in the form of an inflammation of the mucous membrane does not result from inflammatory diseases originating in the uterus or adnexa. 2. Involvement of the appendix viewed as a peritoneally covered organ may take place as part of a peritonitis, more or less localized or more or less extensive, which has its origin in inflammatory diseases of the adnexa. 3. Severe inflammations of the appendix, in so far as they cause a pelvic peritonitis or in so far as the accumulation of pus is located in the pelvis, naturally involve the uterus and adnexa in adhesions, do not cause pyosalpinx, but may cause tubo-ovarian cysts. 4. A differential diagnosis as to original site of the infection, when the appendix and right adnexa are involved, is often impossible except from the operative clinical standpoint and even then is not always certain. 5. Mild attacks of appendicitis, without the production of well-defined peritonitis, may involve the adnexa without adhesions, but especially by infection of the Graaffian follicles, alterations of the stroma and the production of varicocele of the broad ligament. 6. Such alterations in the adnexa generally result from processes extending from the cervix and uterus into the broad ligaments and a definite decision as to the source of the trouble may be often impossible.

5. Health and Education.—Jarrett expresses convictions formed as the result of examining yearly from 800 to 1,200 applicants, men and women between 18 and 25 years of age, the finished product of public school training, physical and intellectual. The examination is threefold: the written examination, an intellectual test, the oral examination, a test of the personal equation, and a physical examination. It was found that 7 per cent. were rejected for various conditions of disease that were likely to make them soon a burden on the pay rolls, but the process further caused amazement at the low standard of health among the younger groups of candidates from high schools, normal colleges, and the College of the City of New York. Many cases of anemia, albuminuria and organic heart lesions were found. As the subjects came for physical examination after the prolonged strain of examination, this was attributed to that cause. When the physical examination was changed so as to precede the others, the results gave rise to the following conclusions: 1. A strain of even a few weeks may produce in these young people a temporary derangement. 2. Those with organisms sufficiently strong react immediately on removal of the strain. 3. A small percentage have had the way paved for permanent injury to a vital organ.

Boston Medical and Surgical Journal.

April 9.

8 Significance of Clinical Histories Before and After Operative Demonstration of the Real Lesion. (To be continued). M. H. Richardson, Boston.
9 *Observation Hospital or Wards for Early Cases of Mental Disturbance. L. V. Briggs, Boston.
10 Infantile Pyloric Stenosis with Autopsy Six and One-Half Months After Successful Gastroenterostomy. J. L. Morse and F. T. Murphy, Boston.
11 Case of Congenital Stenosis of the Pylorus. C. W. Townsend, Boston.
12 *Scope of Therapeutic Inoculation. G. P. Sanborn, Boston.

9. Observation Wards for Mental Disturbance.—Griggs adduces further evidence in favor of the movement for the establishment of observation hospitals or wards, for early cases of mental disturbance from both old and new sources.

12. Bacteriotherapy.—Sanborn has studied Wright's methods carefully, in the capacity of assistant for five months, after a previous course on immunity in the University of Cambridge, where Wright's work was discussed fairly but without much enthusiasm. The results there showed that the possible error might be at any time from 25 to 100 per cent. During his work with Wright, however, he learned of and followed investigations being carried out regarding the reasons for inaccuracy in opsonic determination. These researches will be published in the future from Wright's laboratory. But he asserts that one who is not cognizant of these sources of error can not hope to obtain accurate indices unless he chances to be lucky. There still remain four or five sources of error, which are at present unrecognized, that may lead, even in the hands of those possessed of thorough technic, to inaccuracies varying from 25 to 200 or 300 per cent. He describes the work in Wright's laboratory and his own personal observations in re-

gard to lupus, ulcer and particularly sinuses, tuberculous bone disease, tuberculous adenitis, tuberculosis of joints and tendon sheaths, tuberculous cystitis, tuberculous peritonitis, pulmonary tuberculosis, etc. He emphasizes particularly the necessity of exercising the greatest care to avoid bringing discredit on the work, through the making of serious errors, and quotes Theobald Smith's statement (THE JOURNAL, March 21, 1908, page 934), that "it is easier to arouse the nervousness of the public than to allay it. Whenever practice outruns the laboratory, and, more or less impatient, applies the latter's results to the prevention and cure of the disease, it frequently deals with half truths whose application may be harmful."

New York Medical Journal.

April 11.

13 Case of Pernicious Malaria with Autopsy. G. R. Satterlee, New York.
14 Case of Sarcoma of the Choroid. A. J. Herzig, New York.
15 *Vivisection from a Student's Standpoint. V. C. Pedersen, New York.
16 *Malaria in Greece. A. Rose, New York.
17 Cammidge Reaction in Pancreatic Disease with Notes of Case. G. A. Friedman, New York.
18 Case of Poisoning with Tansy (Tanacetum). E. J. Stout, Philadelphia.
19 *Comparative Therapeutic Value of the Compounds of Iron. R. E. Van Gieson, Brooklyn, N. Y.
20 Surgical Treatment of Appendicitis. J. E. Cannaday, Wheeling, W. Va.
21 Case of Cerebral Abscess with Masked Symptoms. R. E. Coughlin, Brooklyn, N. Y.

15. **Vivisection.**—Pedersen, in an address by invitation before the National Society of Ohio Women, describes in detail the principles of ten therapeutic measures which have been established as a result of experimentation on animals, and illustrates their application with incidents. He discusses the measures for limiting animal experimentation at present before the legislature.

16. **Malaria in Greece.**—Rose summarizes the report of a syllogos, or association, founded by Dr. Cardamatis with the object of combating malaria in Greece. He describes the measures employed, drainage, destruction of mosquitoes, provision of quinin, and the various measures of public education, by means not only of the medical profession, but also of the public schools, the clergy, the press, the distribution of handbills and public display of notices, and public lectures with stereopticon demonstrations.

19. **Therapeutic Values of Iron Compounds.**—Van Gieson discusses the metabolism of iron in reference to the therapeutic value of the drug and the mode of its administration, particularly in relation to the official preparations versus the "organic" forms. He concludes that a careful study of iron metabolism shows that the official preparations of iron so long useful in the past will increase hemoglobin. The ferrous carbonate; the soluble oxid with sugar; the double salts with the vegetable acids; the solution of the perchlorid given in combination and largely diluted with milk, are the forms most likely to produce good results. Directly conflicting views as to the value of the modern proprietary preparations exist among competent observers. In all iron medication the question of defective metabolism is important. Cases must be individualized and preparatory treatment is essential. Rest in bed, massage, milk diet, unfermented grape juice and static electricity are valuable adjuvants preparatory to or during the administration of the iron compounds.

Lancet-Clinic, Cincinnati.

April 4.

22 Fifty Years of Practice in Cincinnati. W. H. Taylor Cincinnati.
23 *Treatment of Inguinal Hernia in Children. F. B. Walker, Detroit, Mich.
24 *Painful Feet. J. L. Porter, Chicago.
25 *The Uterine Curette: Its Use, Abuse and Dangers. J. F. Baldwin, Columbus.

23. Abstracted in THE JOURNAL, Nov. 2, 1907, page 1553.

24. **Painful Feet.**—Under this heading Porter discusses (1) weak feet, (2) flat feet, (3) rigid feet. In regard to the last he calls particular attention to gonorrheal arthritis of the tarsus, and particularly of the articulations of the os calcis, which he believes to be much more frequent than is commonly suspected. The condition known as "painful heel" is so often the result of gonorrheal infection that such infection should be suspected in every instance.

25. **Uterine Curette.**—Baldwin discusses the dangers of curetting in regard to dilatation, perforation and septic infection, particularly the carrying of gonorrheal infection, which is frequently limited to the cervix, into the interior of the uterus. In tubal trouble the curette will probably do more harm than good. It may check hemorrhage the result of a myoma, but only temporarily, and should not be used unless the reasons for palliation are very pronounced. It may be advantageously used in hemorrhage when tubal disease can be excluded and the hemorrhage is due to fungous endometritis or to retention of placenta or membrane. It should in no case be used without a positive indication or as a routine office procedure. He reports three cases in which its use necessitated surgical intervention to save life, but with the unfortunate result that three young women were deprived of all hope of maternity in the future.

American Journal of Medical Sciences, Philadelphia.

March.

26 *Exophthalmic Goiter and Its Treatment. W. H. Thompson, New York.
27 Adiposis Tuberosa Simplex. J. M. Anders, Philadelphia.
28 *Choice of Operation in Pyloric Stenosis. J. M. T. Finney, Baltimore.
29 Occurrence of Congenital Adhesions in Common Iliac Veins, and their Relation to Thrombosis of the Femoral and Iliac Veins. J. P. McMurrich, Toronto, Can.
30 *Acute Glandular Fever. G. I. Jones, Washington, D. C.
31 *Epidemic Cerebrospinal Meningitis in Hartford, Conn., During 1904-1905, with Special Reference to the Cases Treated at Hartford Hospital. W. R. Steiner, Hartford, Conn., and C. B. Ingraham, Jr., Baltimore.
32 Tumors of the Cauda Equina and Lower Vertebræ. Report of Nine Cases, Seven with Necropsy, Three with Operation. W. G. Spiller, Philadelphia.
33 *Morbid Somnolence. D. Hecht, Chicago.
34 Fatal Case of Pontile Hemorrhage with Autopsy. T. Diller, Pittsburg, Pa.
35 Fatal Case of Chorioepithelioma of the Uterus, with Autopsy. B. M. Anspach, Philadelphia, and H. R. Alburger, Bloomington, Ind.
36 *Specific Immunity and X-Ray Therapeutics. A. W. Crane, Kalamazoo, Mich.

26. **Exophthalmic Goiter.**—Thomson describes the manifold symptoms of this disease, and points out that no organic change accompanies any one of them. He concludes that one and the same agent produces all the effects, and that the disease is due to a specific poison that goes wherever the blood goes, and causes no more tissue changes, except indirectly on nutrition, than does opium or aconite. The nature of this poison is wholly unknown. The uncertainties of this disease are due to the fact that we are yet at sea as regards the physiology of the thyroid and its associated structures. Thomson discusses in detail the theories that relate the disease to hypersecretion of the thyroid and to the parathyroids. He says that there can be no doubt of the efficiency of Beebe and Rogers' serum in many cases, though its explanation is another matter. He considers those cases without goiter the most difficult to treat. His own views of the pathology are based on therapeutics. Clinical observations are as good as laboratory experiments, provided that in making them the same care is taken against fallacies in observation and deduction. His final verdict is that proper medical treatment furnishes the best chances for recovery in severe cases. The one condition in which he has little hope is when uncontrollable vomiting and diarrhea have supervened in a patient already very weak. The important items in treatment are rest from muscular and mental exertion and diet, in which entire absence of meat, oysters, clams, lobsters and dark meat game is essential, and only very limited recourse to poultry, eggs (only one a day), and quail or partridge. Vegetarianism is best Milk fermented with yeast or Asiatic ferments, or even peptonized, but never raw, is the all important article of diet. Beans, peas, spinach and asparagus are forbidden. Fruits, except uncooked apples and strawberries, are beneficial. Individual idiosyncrasies must be respected. Medicinally, sodium phosphate, 30 grains (2 gm.) at the beginning of each meal, and a blue pill or other mercurial laxative once a week are recommended; also intestinal antiseptics, such as sodium salicylate or benzoate, of each

10 grains (0.65 gm.) an hour after each meal. At bedtime naphthalene, 3 grains (0.19 gm.) and sodium benzoate, 10 grains (0.65 gm.) in a capsule. After a time phenol bismuth and ammonium benzoate, of each 5 grains (0.32 gm.), two pills an hour after meals, may be substituted.

28. **Pyloric Stenosis.**—Finney considers, first, cases of known or suspected carcinoma The patient's condition will have much to do with the choice of operation when the growth is at all advanced. A rapidly performed gastroenterostomy, done to save time, perhaps with a Murphy button, may be best. In early cancer, a pylorectomy is always the operation of choice. In those cases in which the condition found leads to doubt between early carcinoma and indurated and infiltrated stomach wall around a gastric ulcer, especially in patients past middle life and in whom the ulcers have run a chronic course, pylorectomy is the preferable operation. In benign cases the choice will lie between gastroenterostomy and some other surgical procedure, e. g., pylorectomy, pyloroplasty or gastroduodenostomy. He discusses these operations and announces his preference for pyloroplasty, finding its results better than those of any method of gastroenterostomy he has used. He now uses it altogether, except in gastric cancer, in which his results with Mayo's "no loop" method has been gratifying.

30. **Acute Glandular Fever.**—Jones defines this as an infectious disease developing as a rule without premonitory signs, and characterized by slight redness of the throat, high fever, and swelling and tenderness of the lymph glands of the neck, particularly those behind the sternomastoids. The fever is short, but the glandular condition persists for from ten days to four weeks. He discusses the history, etiology, symptomatology and differential diagnosis, and describes two cases. In a table he shows the comparative differential data between this disease and influenza, leukemia, tuberculous lymphadenitis and typhoid. He expresses the opinion that some cases of typhoid fever of short duration have been nothing other than acute glandular fever, and that this disease should be given a more prominent place among the acute infectious diseases, both among children and adults.

31. **Cerebrospinal Meningitis.**—Steiner and Ingraham report the conditions observed in the epidemic at Hartford, Conn., in 1904-5, in regard to sex and age incidence, months of occurrence, occupation, etiology, mode of onset, morbid anatomy, symptoms, blood examinations, types of fever, prognosis, diagnosis and treatment. Twelve possible examples of contagion occurred and are described. On the other hand, there were a number of families in this epidemic among whom but one case of the disease occurred.

33. **Morbid Somnolence.**—Hecht describes the case of a colored man, 48 years old, who drops off to sleep for half an hour or so every three hours. The sleep is refreshing but light, so that no word spoken in his hearing escapes him. He is easily aroused. The naps come on with almost instantaneousness. There is no drowsiness between the naps, and his awaking is instant and without any confusion or other feeling left behind. There is a history of specific disease at 18. The patient is moderate in all his habits and sexually temperate. Pupils are normal, coordination is normal, also the abdominal viscera, and there is no adenopathy. The reflexes show a contralateral disparity, which Hecht considers probably due to a past spinal lues, though the absence of motor or sensory disturbance scarcely conforms with this view; but they can hardly be regarded as hysterical, and a cerebral lesion seems altogether out of the question. A group of symptoms, plus 0.4 per cent. of albumin, with granular, fatty and epithelial casts in the centrifuged sediment, suggests secondary contracted kidney. The author discusses the literature of narcolepsy.

36. **Specific Immunity and X-Ray.**—Crane reports four cases—the first, one of pustular acne of the face; the second, one of lupus of the face; the third, one of lupus of the nose, and the fourth, one of tuberculous glands in the neck of a 10-year-old boy—in which the treatment was guided by a study of the opsonic index. It appears that the use of the rays at the proper time—just as the positive phase begins to decline—raises the opsonic index. This rise ceases as the infectious agent is eliminated, and occurs apparently only for germs present in the lesion. The charts of opsonic indices during *x*-ray treatments and during opsonic treatments are similar in all essential particulars. The author draws the following conclusions: 1. That all *x*-ray treatments, to be effectual, may require a degree of intensity sufficient to set free in the tissues what is equivalent to an autogenous vaccination. 2. That the duration of the exposure and the extent of the diseased tissue exposed should be so regulated as to induce either a small negative phase or none at all. 3. That the repetition of exposures, as far as possible, should be governed by the duration of the negative and positive phases; and that, in conditions of which the disease-producing agent is as yet undetermined, one should be governed by an analogy with those cases in which opsonic estimations can be made. It follows as a corollary that it is not necessary to expose the whole area in order to bring about complete recovery, and that exposures should not, as a rule, be repeated oftener than twice a week, and probably usually at less frequent intervals, to get the maximum results and to avoid prolonged or incurable negative phases. It is also increasingly necessary to measure *x*-ray dosage. He considers that the advantage of *x*-ray treatments over opsonic therapeutics are as follows: 1. The immunizing substance set free under the influence of the *x*-rays is of necessity autogenous; that is, it is formed from the actual microbic strain which is producing the disease. One has only to read Wright's articles to learn how important it is in opsonic practice to use a vaccine made of the bacteria from the patient rather than from a stock culture. 2. Many of the difficulties and mistakes incident to a bacteriologic diagnosis are eliminated. 3. In cases in which the bacteriologic cause is as yet undetermined, or in which the disease-producing agents are not bacteria, the *x*-rays are nevertheless applicable.

Interstate Medical Journal, St. Louis.

March.

37 Mechanical Problems of the Circulation and Their Solution. J. Eichberg, Cincinnati.
38 *Unusual Positions of the Appendix, with Report of Cases. H. Tuholske, St. Louis.
39 *The Cutaneous Tuberculin Reaction. L. M. Warfield, St. Louis.
40 *History of the House; the Struggle for Fresh Air and Light. G. M. Gould, Philadelphia.

38. **The Appendix.**—Tuholske reports seven cases in which on operation the appendix was found under abnormal circumstances. The first was a case of complete transposition of the viscera. The condition being known prior to operation, the incision was made on the left side and the appendix found as expected. In Case 2, on operation the rectum being discovered on the right side, an incision on the left was made and the appendix removed through it. In Case 3, the appendix was found loose, gangrenous and floating in pus in the cecum, which was opened under the supposition that it was a pus cavity. In Case 4, the tip of the appendix was found attached to the fimbriated extremity of the Fallopian tube, a pus tube, on the left side; the cecum was dragged over almost to the middle line. In Case 5, the appendix was attached to the under surface of the liver. In Case 6, it lay on, and was adherent to, the abdominal aorta, just below the celiac axis. In Case 7 the appendix was found in the normal position, but extended far down into the pelvis. As its tip could not be reached, a larger incision was made, and following the appendix downward, it was found attached to the prostate, where it was lost in a mass of adhesions. A peculiar feature in this last case was that, without any apparent exciting cause, the patient had for months been troubled with repeated seminal emissions. Tuholske thinks that possibly irritation of the prostate, or perhaps of the seminal vesicles, by the inflamed and adherent appendix may have been the cause of the emissions.

39. An abstract of this article was published as a clinical note in THE JOURNAL, Feb. 29, 1908, page 686.

40. **The History of the House.**—Gould continues from the last issue the history of the evolution of the house from its earliest phases. The articles are well illustrated.

Journal of the Indiana State Medical Association.

March.

41 *Treatment of Tuberculous Glands and Goiter with the Roentgen Ray. A. M. Cole, Indianapolis.
42 Diseased Conditions Caused by Mouth Breathing, and Their Prevention. G. W. Spohn, Elkhart.
43 *Prophylaxis the Essential Function of the Tonsil. B. H. Orndoff, Chicago.
44 Practical Notes from a General Practitioner of Medicine. G. Rowland, Covington.

41. **Tuberculous Glands.**—Cole concludes that tuberculous glands are amenable to Roentgen-ray treatment, as are also a large percentage of simple goiters and some cases of exophthalmic goiter, symptomatically at any rate. The technic of the treatment is exceedingly important. No unfavorable effects have been reported in this class of cases.

43. **The Tonsil.**—Orndoff considers that the tonsil has for its function the early establishment of immunity to bacterial toxins. Its location is the most suitable point for the certain collection of specimens of every kind of micro-organism entering the oronasal cavity. When the bacteria have been in the crypts long enough to elaborate a sufficient vaccine, which is transported by the lymph current through the system, an immunity not associated with a toxemia has been induced for that form of bacterium. This organism is then annihilated by bacteriologic substances brought by the returning lymph current and is removed from the system.

Therapeutic Gazette, Detroit.

March.

45 *Treatment of Pneumonia. M. H. Fussell, Philadelphia.
46 Radium Therapy. J. B. Shober, Philadelphia.
47 Iodalbin—An Organic Iodin as a Therapeutic Agent. L. W. Bremerman, New York.
48 *Relation Between Stauungs-Hyperemia and Opsonic Index. J. C. Hollister, Chicago.
49 Case of Tuberculous Arthritis of the Knee Apparently Much Aggravated by Bier's Congestion. J. J. A. Van Kaathoven, Philadelphia.
50 Hyperemia Treatment of Acute and Chronic Surgical Affections. M. Brooks, Philadelphia.

45. **Pneumonia.**—Fussell says that so far there is no specific treatment for pneumonia. He has used quinin in massive doses, a method lately revived by Galbraith, but with no greater success than symptomatic treatment. Veratrum viride has been found wanting. The basis of all treatment is rest, fresh air, a good nurse, and watchfulness on the part of the physician. His symptomatic treatment consists of hot applications, and occasionally a hypodermic of morphin for the chill. Pain is combated by cold or heat or dry cups, occasionally morphin may be necessary. For hacking cough he gives codein sulphate, ⅛ grain (0.008 gm.), in solution or pill, every two or three hours. Sweet cough mixtures should not be used, or with much bronchitic expectoration a mixture of ammonium chlorid and ammonium carbonate. Mistura glycyrrhizæ composita is useful. Fresh air renders the employment of remedies less necessary. There should be no mechanical restraint; delirious patients require a special attendant. Thirty grains (1.95 gm.) of ammonium bromid are efficient in securing rest. Stimulation of any kind is frequently unnecessary, but if needed should be given in good and sufficient doses. When the blood pressure begins to fall, the heart to dilate, and the patient to become cyanotic, is the time for stimulation. The heart should be examined daily, stimulation being resorted to with failing pressure. Nitroglycerin is not a heart stimulant, but it may be used when blood pressure is high, to dilate peripheral vessels. When large doses of digitalis are called for they are more efficacious if given in conjunction with nitroglycerin. Fussell gives whisky as a routine measure in the case of drunkards or continuous drinkers. For fever over 105 F. cold baths give excellent results. Never use the coal-tar antipyretics. Fresh, unbreathed air, with laxatives and food, are most important. The bowels should be moved daily with salts or calomel in divided doses; high enemata of salt solution are most efficacious. The mouth and teeth should be kept clean. Milk, in the form of junket, plain or peptonized, is usually well borne and certainly sufficient food. Albumin water and beef juice may be given. Fussell avoids poultices, home made or in the form of pastes. The relief of pain can be more efficaciously effected by cold or hot-water coils, cups or cold compresses. Blood letting has its place. For nephritis he recommends the following mixture:

℞.	gm. or c.c.		
Potassii bromidi Potassii citratis	āā 8	or	3ii
Succus limonis	15		fl℥ss
Syrupi, q. s.	90		fl℥iii

Sig.: Two teaspoonfuls in water every two or three hours.

48. **Constriction Hyperemia and Opsonic Index.**—Hollister says that if one ascertain the opsonic index of fluids obtained from chronically infected tissue areas it will be found that this index in the large majority of cases is below that of the patient's general circulation. After the use of a Bier *Stauung* apparatus one will find the local index to have been raised toward, or quite to, that of the general circulation. This is probably one reason for the beneficial results following the use of such apparatus. He discusses the value of the hyperemia as (1) a pain-quieting agent, (2) a bacterial destroyer, (3) a resorbent, (4) a dissolvent, (5) a nutrient, and describes some experiments under the second classification on which the opening statement of the article is based.

Journal of the Arkansas Medical Society, Little Rock.

February.

51 What We, as Physicians, Can Do to Control and Eliminate Pulmonary Consumption. C. M. Lutterloch, Jonesboro.
52 *Acquired Syphilis. W. E. Hughes, Pocahontas.
53 Pneumonia with Report of Cases. C. A. Archer, De Queen.
54 Adhesions Following Abdominal Operations. O. Gray, Little Rock.
55 Treatment of Coughs. E. H. Winkler, De Witt.

52. **Syphilis.**—Hughes discusses the diagnosis and treatment of syphilis and urges the enactment of a law by Congress making compulsory castration for every male syphilitic, and ovariotomy for every female syphilitic. He would endorse a law prohibiting the landing of syphilitics in the United States.

Alabama Medical Journal, Birmingham.

February.

56 Gastric Ulcer. L. G. McCollum, Birmingham.
57 General Management of Pneumonia Cases, with Study of Fresh Air Treatment. K. Bradford, Birmingham.
58 Circulation of Intestinal Tract. B. Robinson, Chicago.
59 Laminectomy for Fracture of Tenth Dorsal Vertebra—Recovery. J. M. Mason, Birmingham.
60 Plea for Conservatism in Treatment of Tuberculous Knee. W. T. Berry, Birmingham.
61 Intramuscular Injection of Mercury. A. F. Toole, Birmingham.

March.

62 Pathology and Etiology of Polyps and Carcinoma of the Rectum. C. E. Dowman, Jr., Birmingham
63 Treatment of Polypi, Ulcers and Cancers of the Rectum. G. A. Hogan, Birmingham.
64 *Ligature Operation for Hemorrhoids. E. M. Robinson, Birmingham.
65 Etiology, Pathology and Treatment of Diseased Tonsils and Adenoids. B. D. Sibley, Birmingham.
66 Common Functional Disorders of the Urinary Tract. H. Levy, Birmingham.
67 Hereditary Syphilis. O. P. Board, Birmingham.
68 Two Therapeutic Indications for Iodalbin. W. Lenneker, Chicago.

64. **Hemorrhoids.**—Robinson describes the ligature operation used by him. With a small, sharp knife an incision 1/16 of an inch deep at the junction of skin and mucous membrane is carried entirely around the anal orifice outside of the tumor. The bleeding is slight. A section of the tumor is grasped between two sets of two pairs each of artery forceps, the sets including between them only so much of the tumor as can be securely tied with a double transfixed ligature. A medium-sized, half-curved needle, carrying a strong 12-inch silk or linen ligature, both ends being the same length, is introduced into the circular incision, carried to the base of the tumor, and brought out at its most internal part, care being taken to avoid including any of the sphincter fibers. The portion of the tumor included between each pair of forceps is next cut well down to the point. The ligature is cut from the needle and the double ligature crossed and tied on either side, including the nearest forceps of each set and that part of the tumor included between them. The section thus tied off is cut as near the ligature as is safe. The process is repeated until the whole tumor has been ligated in sections. The author has never had any complications follow an operation performed in this way.

Pennsylvania Medical Journal, Athens.

March.

69 Duty of the State to the Physician and of the Physician to the State. T. G. Simonton, Pittsburg.
70 *Points in Treatment of Suppurative Appendicitis. E. LaPlace, Philadelphia.
71 Importance of Early Evacuation of Pus in Acute Otitis Media. L. S. Somers, Philadelphia.
72 *What Can a Secretary Do to Get New Members? J. J. Coffman, Scotland.
73 Relation of the Secretary to the Society and to the Profession. A. F. Myers, Blooming Glen.
74 *The Young Men of the Society; How to Interest Them. H. C. Frontz, Huntingdon.
75 *The Lazy Secretary and His Baneful Effect on the Society. E. U. Buckman, Wilkesbarre.

70. Abstracted in THE JOURNAL, Nov. 9, 1907, page 1625.

72, 74 and 75. Abstracted in THE JOURNAL, Nov. 16, 1907, page 1706.

Buffalo Medical Journal.

April.

76 Significance and Treatment of Uterine Hemorrhage. W. E. Fitch, New York.
77 *Urgency of Early Diagnosis of Cancer of the Stomach. A. McPhedran, Toronto, Ont.
78 Case of Dibothriocephalus Latus' Infection. C. O. Boswell, Rochester, N. Y.

77. This article was published in "International Clinics," Vol. IV.

Carolina Medical Journal, Charlotte.

March.

79 Treatment of Epilepsy. J. A. Hodges, Richmond.
80 Case of Imperforate Hymen. H. A. Royster, Raleigh, N. C.
81 An Attempted Explanation of Sudden Death Subsequent to Injections of Antitoxin. J. F. Patterson, New Bern, N. C.
82 Acute Bronchitis, Its Drug Therapeutics. W. C. Abbott, Chicago.

St. Paul Medical Journal.

March.

83 Why Should Hospitals Neglect the Care of Chronic Curable Disease in Out-Patients? R. C. Cabot, Boston.
84 Abdominal Blood Supply. B. Robinson, Chicago.
85 Tubal Pregnancy with Especial Reference to Diagnosis. F. J. Savage, St. Paul.
86 The Counter Prescriber. E. J. Abbott, St. Paul.
87 Municipal Sanitation. W. A. Evans, Chicago.

Archives of Otology, New York.

February.

88 The Occipital Bone in Otology and Rhinology. E. de W. Wales.
89 Headache Caused by Pathologic Conditions of the Nose and Its Accessory Sinuses. G. H. Cocks and J. E. MacKenty, New York.
90 Value of the Leucocyte Count in the Diagnosis of Acute Inflammatory Disease. F. E. Sondern, New York.
91 Value of Bacteriologic Investigations in Otology with Special Reference to Blood Cultures. E. Libman, New York.
92 Case of Mastoiditis in an Infant. J. F. McCaw, Watertown, N. Y.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London.

March 28.

1 *Pathology of Acid Intoxication. F. A. Bainbridge.
2 *Tuberculosis of the Kidney and Malignant Disease of the Cecum. C. J. Symonds.
3 *Opsonins with Special Regard to Lupus Vulgaris. A. Reyn and R. Kjer-Petersen.
4* Modern Methods of Treating Infective Conditions of the Throat. M. Young.
5 *Acquired Diverticula of the Sigmoid Flexure, Especially in Relation to Secondary Pathologic Processes and Their Clinical Symptoms. (Concluded.) W. H. M. Telling.
6 Case of Diaphragmatic Hernia. H. O. Williams.
7 Case of Meralgia Paræsthetica Successfully Treated with the Constant Current. E. R. Morton.
8 Perforation of the Esophagus by a Rabbit Bone; Septic Inflammation of the Mediastinum; Ulceration into the Aorta; Death from Hemorrhage. R. L. Knaggs.
9 Method of Preparing "New Tuberculin" (Tuberculin T. R.); A Correction. W. G. Ruppel.

1. **Acid Intoxication.**—Bainbridge, in the Arris and Gale lecture, discusses acidosis rather as a phase of metabolism than as a separate pathologic entity. The ammonia excretion may be fallacious, and an implicit belief in the value of the ammonia quotient is not free from danger. He asserts that lactic acid is never the cause of acid intoxication in man; its appearance in the urine is either the result of excessive production by the muscles or secondary to the failure of the liver to convert ammonia into urea; it is not due to deficient oxidation of lactic acid by the liver. As regards the acetone bodies, admitting that they are derived from fat and that in starvation the consumption of fat is increased, the inconstancy of the results obtained on a diet of fat indicates that the tissues of a healthy man can deal with large quantities of fat, and that it may not be safe to assume that the acidosis of starvation is the direct result of the excessive consumption of fat. In starvation, acidosis may occur, not because the consumption of fat is excessive, but because carbohydrate is absent; and the addition of carbohydrate may abolish acidosis, as it does in starvation by the administration of small amounts, not only by supplying energy to the body, but also by modifying the metabolism of the cells. When one considers the large amount of proteid often consumed by diabetics, it seems possible that the intake of proteids yielding much leucin may appreciably influence the degree of acidosis; experiments from this standpoint might indicate which proteids are most suitable in diabetes. He says that too much stress has been laid on the analogy between diabetic coma and experimental acid intoxication. In the latter condition there is a continuous drain on the alkalies and alkaline earths of the body, since the formation of ammonia is insufficient to combine with all the acid excreted. It seems extremely probable that the lack of some or all of the bases may primarily disturb the course of metabolism, independently of the alkalinity of the tissues; and after all the alkalinity of the tissues does not depend solely on their inorganic constituents since the proteins apparently can act either as weak acids or as bases. On this view, even the diminished alkalinity of the blood in coma may be interpreted as due to a final effort of the tissues to satisfy their need for base. It does not suffice to supply the body with sodium carbonate, and the value of the treatment of diabetes with alkali might be much greater if all the bases required by the body were administered to these patients. An accurate knowledge of the amount and character of the bases present in diabetic tissue would also be of great value. The severe toxic symptoms which occasionally follow anesthesia can be explained only by assuming that the anesthetic remains in combination with certain tissues, since doses of anesthetics which are too small to induce anesthesia will produce, if frequently repeated, similar metabolic disturbances in animals. A plentiful supply of carbohydrate, not only in postanesthetic intoxication, but also as a routine preventive measure before operation, appears to be the rational treatment.

2. **Tuberculosis of the Kidney.**—Symonds, in his second Lettsomian lecture, concludes that early nephrectomy is indicated as soon as the destructive process has been localized, and this may be on the first visit of a patient who has retained his weight and working power up to that moment. The best guide to nephrectomy in the absence of a renal tumor or profuse pyuria is the cystoscope, and his experience teaches that when the orifice of the ureter shows characteristic changes renal disease is beyond recovery and the sooner the organ is removed the better.

3. **Opsonins.**—Reyn and Kjer-Petersen report experimental work undertaken to ascertain if it were possible by tuberculin therapy, guided by opsonic estimations, to produce such an effect on patients suffering from lupus, that the disease would either disappear or be relieved, light or *x*-rays being also sometimes used in the treatment. The investigations have led to no practical results.

4. **No Value in Gargling.**—Young reports experiments from which he concludes that gargling has no advantage, and has serious disadvantages, for throat disinfection. Spraying is little better. Swabbing and douching are the only reliable methods. He considers medication by antiseptic lozenges an ideal line of treatment.

5. **Diverticula of the Sigmoid.**—Telling concludes his article from the last issue with a consideration of the clinical aspects. The great majority of patients present themselves to the clinician with one of the four following conditions: 1, Inflammatory trouble, more or less acute, in the left lower abdomen; 2, intestinal obstruction; 3, perforative peritonitis; 4, vesicocolic fistula. He concludes that: Vesicosigmoid fistula, due to

acquired diverticula of the bowel, is a definite pathologic condition of some frequency; the facts adduced hold out a much greater prospect of relief by surgical interference; an operation may be merely palliative, or preliminary to more radical measures; and in either case left colotomy will be the most probable procedure, or a radical operation may be undertaken in the first instance.

British Medical Journal, London.

March 28.

10 *New Ideas on Fractures of Importance to the Medical Profession and to the Public in Connection with Their Responsibilities and Possible Legal Liabilities. Lucas-Championnière.
11 *Arthrodesis and Tendon Transplantation. R. Jones.
12 *The Most Ancient Splints. G. E. Smith.
13 The Postmortem Staining of Bone Produced by the Antemortem Shedding of Blood. F. W. Jones.
14 Examination of the Bodies of One Hundred Men Executed in Nubia in Roman Times. Id.
15 *Case of Excision of the Body of the Scapula. R. P. Rowlands.
16 Punch Fractures. H. Burrows.
17 Calmette's Ocular Reaction. H. E. R. Stephens.
18 Id. H. de C. Woodcock.
19 *Id. H. C. Lecky.
20 Case of Vomiting in Pregnancy. J. A. Kendall.

10. **Fractures.**—Lucas-Championnière discusses fractures from the points of view both of the public as to the requisites of adequate treatment, and of the liability of the practitioner to actions for malpractice based on the public's supposition of its competence to form a judgment in cases of fracture. This lay opinion is increased of late by the tendency to semi-enlighten the public on medical matters generally, and more particularly by nursing, ambulance and first-aid classes, and still more as a consequence of radiography. To combat this evil, people must be made to understand the difficulties involved in the study of fractures. They must be taught that radiographs have to be interpreted; that the reduction of fractures is not an absolute rule, and is often not indispensable; that absolute rest is not the necessary test of every sound treatment for fractures; that a fracture is not a simple lesion, but includes complications owing to displacement, and to rupture of tendons and muscles; and that there is no mathematical solution for the repair of fractures. It is always difficult to put the public on its guard against the rooted belief that it knows and can understand everything relating to medicine; but in the case of fractures the surgeon must be especially on his guard, because nothing will uproot the conviction of the public that it can understand every secret in connection with the treatment and repair of bones. His paper has for its text the English action at law of Southern versus Lynn Thomas and Skrime, in which the defendants have been mulcted in damages and heavy costs as a consequence of a series of false ideas entertained by the judge and jury regarding fractures, and especially of two beliefs—that for every fracture there is a routine mathematical treatment whose effects are referable to a known immutable law, and that it is right to blame a medical man for not having rendered implicit obedience to the absolute laws laid down for the treatment of fractures.

11. **Arthrodesis and Tendon Transplantation.**—Jones concludes that arthrodesis, properly performed, is a valuable means at the surgeon's disposal, and that failures which have been reported are generally due to neglect of fundamental principles: (a) The operation should not be performed on children under 8. (b) It should not be performed until the surgeon is satisfied that the muscles are paralyzed beyond hope. (c) The preliminary preparation of the foot by wrench and tenotome must correct all deformity. (c) The operation should be so planned that at its completion the bones lie in apposition to the foot, which should be placed in an over-corrected position. This is effected by exsection of skin flaps, by the shortening of lengthened tendons and by the removal of graduated wedges of bone. (e) The wedge should never be taken from the tibia, lest the tibial epiphysis be injured. Splints should be applied and retained until union is complete, and appliances should be worn until the surgeon has evidence that the ankle can bear body weight without fear of yielding. He regards the following as indications for tendon transplantation: (a) To fortify a weakened group of muscles; (b) to supplant a completely paralyzed muscle or group of muscles; (c) to obstruct an overacting spastic group; (d) to deviate tendon action when perverted—as in transference of the tendo Achillis to the outer side of the os calcis in congenital club-foot to prevent inversion of the ankle; (e) as a help in partial arthrodesis. In tendon transplantation the following points must be insisted on: 1. The overcorrection of deformity as a preliminary act. 2. The removal of skin flaps to secure the uninterrupted continuity of the overcorrection. 3. The direct and not angular deflection of the tendon. 4. The free tunneling in the one plane through the soft tissues. 5. The firm suturing into periosteum or bony groove. 6. The careful choice, tension and nursing of the transplanted tendon. 7. The maintenance of a hypercorrected position until voluntary power is assured to the tendon. 8. The deflection of body weight during walking from the reinforcing tendon. In addition to these, it may be well sometimes to shorten all the paralyzed tendons and prevent the overaction of their opponents by tenotomy. In all cases of arthrodesis and tendon transplantation he employs the tourniquet and insists on scrupulous asepsis, particularly insisting on the absolute necessity of not talking.

12. **Ancient Splints.**—Smith describes with illustrations two sets of splints more than 4,500 years old. They are the only known splints applied to living patients earlier than the Christian era. They were taken from mummies.

15. **Excision of Scapula.**—Rowlands concludes as follows: 1. In suitable cases excision of the body of the scapula with preservation of the processes and glenoid socket, is a much better operation than excision of the whole bone, because it leaves a limb far more perfect from the functional and the artistic points of view. 2. The operation is especially suitable for innocent growths, which fortunately and frequently leave the processes and the shoulder joint unaffected. 3. It may be adopted in preference to complete excision of the scapula for some small and for some slow growing malignant growths, without increasing the immediate risk of death, and probably without increasing the danger of either local or general recurrence. 4. Occasionally it may be suitable for inflammatory diseases of the scapula when the shoulder joint is unaffected. 5. It is wise to tie the three main vessels as early as possible in the operation, and this can be done easily through a suitably arranged posterior T-shaped incision. 6. The success of the operation largely depends on careful asepsis, the sewing of some divided muscles together, and the early adoption of systematic active and passive movements of the shoulder.

19. **Ocular Tuberculin Reaction.**—Lecky has collected all the published statistics of this reaction up to the middle of January, 1908, with the following result: Of the 491 cases of definite tuberculosis, 463 (94.3 per cent.) gave a positive reaction. Of 610 cases of people not giving any evidence at all of tuberculosis, 563 (92.3 per cent.) showed a negative result. There are two other classes in which the reaction is being tried—namely, those possibly tuberculous and those probably tuberculous, but the figures under these headings are necessarily of little use at present in estimating the value of the test.

Medical Press and Circular, London.

March 18.

21 *Sudden Death. R. Saundby.
22 Deaths Under Anesthetics. F. J. Waldo.
23 Case of Twin Abortion with Double Placenta Prævia and a Remarkable Condition of Cervix. R. J. Kinkead.
24 *The Natural Cure of Cancer. W. S. Handley.
25 Arteriosclerosis and Physicotherapy. J. A. Riviere.

March 25.

26 *Value of Laboratory Methods in the Diagnosis of Typhoid Fever. L. Blum.
27 Relation of Pathology to Mechanics and Chemistry. W. R. Macdermott.
28 Diverticula of the Ileum Resulting from Tuberculosis and Accessory Pancreas. A. Thomson.
29 Inoculations of Bacterial Suspension. L. C. P. Ritchie.

21. **Sudden Death.**—Saundby discusses sudden death as it occurs in the course of acute disease, of chronic disease, and in apparent health. The principal acute diseases in which it occurs are diphtheria and, less rarely, typhoid fever and pneumonia. Of chronic diseases, in either cancer or chronic phthisis, embolism or syncope may cause instant death. Sudden death

may also occur in heart disease, particularly in aortic incompetence—Saundby has seen a patient with mitral stenosis lying quietly in bed in the ward suddenly attacked by acute edema of the lungs, death ensuing in a few minutes. It may also occur in rupture of an aneurism, in phlebitis, in rupture of varicose submucous, esophageal veins in hepatic cirrhosis, in intestinal obstruction from old incarcerated hernias, in rupture of the spleen, in chronic Bright's disease, through apoplexy epileptiform attacks, in fatal dyspnea, in acute edema of the larynx or lungs. Diabetes, Graves' disease, disease of the middle ear, acromegaly, bulbar paralysis and various forms of insanity may all be responsible for sudden death. In apparent health, sudden death may occur from obstruction of the larynx by food, etc., ruptured tubal pregnancy, disseminated tuberculosis of both lungs without symptoms, and particularly ruptured varicose esophageal veins, of which the author cites several examples.

24. **Cure of Cancer.**—Handley, in the Hunterian lecture, says that the growth of cancer occurs by a process of tendril-like spreading along the lymphatic vessels, which process he calls permeation. He discusses the recorded cases of spontaneous cure of cancer and refers to the condition known as atrophic scirrhus, as indicating that the complete natural cure of cancer is not entirely exceptional. The lymphatic vessels along the course of which the cancer deposit has progressed, become gradually converted into fibrous cords devoid of cancer cells. In large masses the tendency is to degenerate from center to circumference, the cancer mass at the center becoming converted into a fibrous mass without cancer elements. The process of repair begins at the center and spreads outward, but rarely overtakes the growing edge of perilymphatic infiltration. Many cancer remedies, he says, have acquired a reputation on the strength of this natural process, which has been misinterpreted and its results attributed to the remedy. One of the consequences of this natural mode of cure in cancer is the destruction of the lymphatic cells, with consequent obstruction to the lymph flow and painful swelling, such as not infrequently occurs in the arm in cancer of the breast. He has devised a method of relieving this pain by means of drainage through strands of buried silk, which carry away the excess of fluid by capillary attraction.

26. **Laboratory Methods in Typhoid Fever.**—Blum declares that hemoculture is the procedure of election, the only one which can be regarded as absolutely conclusive of typhoid infection. The diazo reaction appears to be useful only in so far that its presence may suggest the possibility of typhoid fever. When careful clinical observation pleads in favor of typhoid fever the negative results of laboratory methods are not *per se* a reason for discarding the diagnosis of typhoid.

Clinical Journal, London.

March 25.

30 Pneumonia in Childhood. T. R. C. Whipham.
31 *Invalidism in Women Due to Chronic Appendicitis. W. S. Handley.
32 Chronic Intestinal Obstruction. H. L. Barnard.

31. **Chronic Appendicitis in Women.**—Handley points out that in a certain proportion of cases of invalidism with dysmenorrhea and chronic pain, but no striking objective signs, the condition is due to chronic appendicitis, and may be cured by appendectomy, if not by appropriate medical treatment. This condition has masqueraded under various names with its actual cause unrecognized. The physical sign on which the diagnosis of chronic appendicitis must mainly rest in doubtful cases is an indolent but intermittent swelling of the right ovary up to double its normal size. This has hitherto labeled the case a gynecologic one.

Practitioner, London.

March.

33 *The Aortic Incompetence of Later Life. Sir J. F. H. Broadbent.
34 *Appendicitis. E. S. Bishop.
35 Valvular Disease of the Heart. R. Crawfurd.
36 Simple Nasal Obstruction. W. S. Syme.
37 The So-Called Adenomata of the Palate. T. P. Legg.
38 Rupture of the Genital Canal During Labor. H. T. Hicks.
39 Ophthalmia Neonatorum. (Concluded.) S. Mayou.
40 *New Method of Intestinal Anastomosis Suitable for Cases of Gangrenous Intussusception. A. Edmunds.
41 *Future Lines of Treatment: Their Effects on the Profession. W. J. Tyson.
42 Diseases of the Blood and Blood-forming Organs. H. B. Shaw.
43 Recent Work on Gout. A. W. Sikes.
44 Case of Retroperitoneal Endothelioma Simulating Malignant Disease of the Pancreas. A. W. Falconer.
45 Open Method of Ether Administration Combined with Chloroform. H. R. Phillips.

33. **Aortic Incompetence.**—Broadbent describes the degenerative lesions of the aorta which may affect the aortic valves as follows: 1, Senile degenerative change; 2, high arterial tension or constant undue strain as from circulating poisons—heredity is an important predisposing factor here; 3, severe intermittent strain on the valves from frequent and violent fluctuations in blood pressure, such as occur in certain arduous occupations; 4, syphilitic aortitis; 5, rupture of the valve. He discusses the physical signs, symptoms and course of the disease, and its prognosis and treatment. He says that there is some difference of opinion as to the blood pressure in aortic regurgitation, which probably arises from not differentiating between cases in which the incompetence is the result of degenerative change, and those in young subjects, in which it is the result of acute endocarditis. In the former the blood pressure is, as a rule, comparatively high; in the latter the converse. In treatment mercurial purgatives, mild diuretics and, above all, a purin-free diet, are necessary in the presence of dyspnea, delirium, restlessness and other uremic symptoms; vasodilators of hypodermics of morphin are of value when anginoid symptoms are present. The use of digitalis is debatable; it is rarely called for in degenerative change. When compensation has completely broken down, the work being thrown back on the right ventricle, digitalis may sometimes prove of service. It should not be employed, even in young adults, still less in later life, in aortic incompetence unless mitral symptoms are present in addition.

34. **Appendicitis.**—Bishop protests against the exaggerated notions as to the universally extreme danger and treacherousness of appendicitis, viz., that when once abdominal pain, localized in the right lower quadrant, vomiting and fever occur, the patient's only salvation lies in the removal of the appendix, for that at any moment and in every case gangrene or perforation may occur. Those who hold this view are too ready to generalize. Gangrene and acute perforation do not die down; when once started they go on to a finish, so that if there is a history of two or three previous slight attacks, gangrene of the appendix may be ruled out, and if perforation occurs it will be in a cavity walled off by adhesions more secure than the most scientific gauze packing could construct. He divides cases of appendicitis into two classes. When many previous attacks render adhesions probable, with the likelihood of tedious and careful dissection, a time for operation should be chosen at which the patient's condition will admit of careful and thorough work. This is not during an attack. After an attack the germs are less virulent, the opsonic index rises, the resisting power is increased. Should perforation take place in such a case it will be into a cavity already well shut off by adhesions; whereas by operating during an attack this natural protection may be disturbed by the surgeon at a time when the virulence of the micro-organisms is highest and the patient's development of antitoxins and opsonins at its lowest. In cases with no history the position is reversed. Here, Bishop thinks that operation, if only to insure thorough drainage at the earliest possible moment is the only wise course. It is not likely that adhesions will be found. The mortality from appendectomy during the quiescent period in expert hands is *nil*. In the same hands during an acute period it is anything from 25 to 75 per cent. He concludes therefore, that in patients with a history of previous attacks we may contemplate with serenity fever, pain and vomiting, which in primary cases should at once demand operation. We may thus defer dangerous and difficult interference to a period at which it can be performed with safety.

40. **Intussusception.**—Edmunds describes an operation, the essential principle of which is to reduce the intussusception as much as possible to a point where the bowel is gangrenous and further attempt must lead to rupture. The whole of the gangrenous and ruptured portion is then withdrawn out of the

wound and a cloth is packed over the wound surface to keep back other coils of intestine. The mesentery is then so ligated close to its attachment to the bowel as to cut off the blood supply, not only of the portion actually gangrenous, but of a small extent of healthy bowel on each side. The whole of this loop of bowel, including a little healthy portion at each end, is removed, and after the contents have escaped the two ends are brought up into the wound and so apposed that surfaces opposite to the mesenteric attachment are in contact. These surfaces are then clamped by special forceps (for which at a pinch a pair of tongue forceps may be substituted) so that a sloughing communication is ultimately established between them. In the meantime a Paul's tube is attached to the proximal end, or, if necessary, to both ends, of the intestine, which, by a few stitches inserted between the skin of the bowel wall are fixed so as to shut off the peritoneal cavity and hold the forceps and intestine in position. The tubes may be removed when they loosen, but the forceps must be left in position for about a week. The subsequent treatment is that of a colotomy, but after a few days the patient will pass feces by rectum. The author suggests that this method may prove serviceable in strangulated hernia containing a loop of gangrenous small intestine. It could be performed in the home without skilled assistance, leaving the patient with his intestinal canal restored in its continuity, and without a permanent artificial anus from the small intestine.

41. **The Future of the Profession.**—Tyson discusses the changes that have taken place in matters medical during the past thirty years in reference to anesthetics, the treatment of consumption, therapeutics, the dominance of the pharmacist over the physician, the ease with which the public can obtain every kind of drug for every kind of trouble, the treatment of cancer and of gastric ulcer. The milk question leads him to hygiene and preventive medicine, which, he says, will gradually become the largest part of the work of the profession. The various inroads on sources of professional income make it necessary that fewer but better qualified men should be admitted to the profession, and that there shall be more and more state supported men in all branches of the profession. Honorary appointments to public institutions will be replaced by paid ones, and cooperative measures, as in other businesses and professions, will inevitably come about. With greater enlightenment quackery will die a natural death. Medicine will no longer be looked on as the art of curing diseases, but as a science of preventing such of them as can not be altogether abolished, and then the physician will take his proper place as the most important functionary in an enlightened state.

Indian Medical Gazette, Calcutta.

March.

46 *Phagocytosis in Blackwater Fever. S. R. Christophers and C. Bentley.
47 Vaccine Treatment of Colicystitis. J. W. Cornwall.
48 Occurrence of Epidemic Dropsy in Comilla Jail. S. Anderson.
49 *Blood Pressures as a Guide in Transfusion for Cholera. L. Rogers and J. W. D. Megaw.
50 Fleas and Disinfectants. M. W. Blyth.

46. **Phagocytosis of Red Blood Cells in Blackwater Fever.**—Christophers and Bentley describe the microscopic appearances of splenic blood obtained by puncture in the early stage of blackwater fever. They found considerable red blood cell phagocytosis, in many instances the red blood cells containing their full hemoglobin, so that they were not cells that had been partially disintegrated prior to engulfment. The engulfing cells were of two kinds, large and small, and in both were seen blood corpuscles in three stages: 1, absolutely normal; 2, partly decolorized in the center; 3, vacuolated, the normal red blood cells being most common in the phagocytes. The most careful examination failed to reveal within any of the engulfed cells either malarial parasites or any other appearance of parasitic invasion. The authors believe that the disease can not be attributed to a special parasite, but must be regarded as a result of malarial infection. The authors' view is that at some period in malarial immunization specific poisons to the red cells are liberated, causing the extensive destruction of these elements, which is the essential feature of the disease.

49. **Blood Pressure in Cholera.**—Rogers and Megaw do not consider the raising of the blood pressure as the one and only end in the treatment of cholera, but call attention to the value of estimating it as a guide to the frequency and quantity of salt solution to be injected. The restoration of the circulation thus brought about not only affords great relief to the patients, but will aid in the elimination of the toxins through the kidneys, and possibly also through the bowel.

Dublin Journal of Medical Science.

March.

51 *Prognosis and Treatment of Nephritis. J. M. Finny.
52 Pathology of Nephritis. H. C. Earl.
53 Manifestations of Congenital Syphilis in the Nervous System. A. E. Wynne.

51. **Nephritis.**—Finny discusses the treatment of acute and chronic nephritis. When local depletion, leeching, cupping and mustard or capsicum plasters are not active enough, in a case of acute hemorrhagic nephritis, he recommends venesection to the extent of 15 or 20 ounces, when the function of the kidneys is totally or greatly arrested and the evidences of uremia are pressing. It is not applicable in the nephritis of acute fevers. Finny also disapproves of flushing the kidneys, which will fail, as diuretic medicines fail, in acute cases with oliguria, but when, by acting on the bowels and skin, to the exclusion of all diuretics, the kidney functions begin to be restored, then flushing the kidneys may be employed with advantage.

Journal of Tropical Medicine and Hygiene, London.

March 16.

54 Kala-Azar in the Royal Navy. P. W. Bassett-Smith.
55 Case of Kala-Azar: Recovery. Sir P. Manson.
56 Phenomenal Abundance of Parasites in the Peripheral Circulation in Fatal Case of Pernicious Anemia. J. Cropper.

Presse Médicale, Paris.

March 18, XVI, No. 23, pp. 177-184.

57 Case of Sporotrichosis of Mucosa of Mouth and Throat with Autopsy. (Sporotrichose de la muqueuse bucco-pharyngée.) M. Letulle.

March 21, No. 24, pp. 185-192.

58 Anaphylaxis. C. Richet.

March 25, No. 25, pp. 193-200.

59 Management of Compound Fractures. (Conduite à tenir en présence d'une fracture compliquée.) P. Hardouin.
60 Dissociation and Antagonism of Cutaneous and Tendon Reflexes. Noica.

Semaine Médicale, Paris.

March 18, XXVIII, No. 12, pp. 133-144.

61 Systematic Drainage in Prophylaxis of Postoperative Phlebitis. F. Moty.
62 Mishaps of Stovain Spinal Anesthesia. (Les méfaits de la rachistovainisation.)

March 25, No. 13, pp. 145-156.

63 *Peripheral Rheumatismal Arteritis. M. Roch and R. Burnand.

63. **Peripheral Arteritis in Acute Articular Rheumatism.**—Roch and Burnand present evidence to sustain their assumption that the endocardium is by no means the only part of the vascular system affected by the infectious process in acute articular rheumatism. This fact has been brought out especially in several Paris theses which they review in detail, summarizing some of the cases of arteritis reported. The process in the arteries seems to be transient, as a rule, but it may leave a predisposition to arteriosclerosis later. The rheumatic arteritis frequently passes unperceived, but there is little doubt that acute articular rheumatism should be classed among the causative factors of arteriosclerosis.

Berliner klinische Wochenschrift.

March 2, XLV, No. 9, pp. 441-484.

64 Skeleton Showing Location of Heart Valves. (Ein nach Form zusammengesetztes Thorax-Skelett zur Demonstration der Lage der Ebenen der Herzklappen.) H. Virchow.
65 Specimen Showing Aneurism of the Ascending Aorta in Position. (Ein in situ fixiertes Aneurysma der Aorta ascendens.) Id.
66 Traumatic Appendicitis. A. Ebner.
67 *Gummatous Affection of Both Caudate Nuclei. Campbell.
68 Differential Cutaneous Reaction in Glanders in Man. (Anwendung der von Pirquetsche Methode zur Diagnostik der Rotzkrankheit beim Menschen.) H. Martel.
69 Myeloid Leukemia. H. Lehndorff and E. Zak.
70 Development of Balneology in Recent Years. Frankenhauser.

March 9, No. 10, pp. 485-528.

71 *What Is the Cause of Death? (Was ist Todesursache?) J. Orth.
72 Serum Diagnosis of Syphilis. Fleischmann.

73 Action of Sodium Oleate in the Wassermann Serum Reaction in Syphilis. (Wirkung des oleinsauren Natrons bei der W.'schen Reaktion auf Syphilis.) H. Sachs and K. Altmann.
74 Variations in the Skeleton of the Foot. (Varietäten des menschlichen Fussskeletts.) W. Bocker.
75 *Hyperemia in Treatment of Internal Affections and Diseases. (Hyperämie in der Therapie innerer Krankheiten.) A. Lewandowski.

March 16, No. 11, pp. 529-580.

76 Indications for Radical Operation in Inflammation of the Nasal Accessory Cavities. (Indikation zur Radikaloperation bei entzündlichen Erkrankungen der Nebenhöhlen der Nase.) A. Küttner.
77 Operation in Acute Hemorrhage in the Pancreas. F. Brewitt.
78 The A-Wave of the Phlebogram. (A-Welle des Phlebograms.) D. Pletnew.
79 Postoperative Roentgen Treatment of Carcinoma. (Nachbehandlung operierter Carcinome mit homogener Bestrahlung.) M. Krüger and F. Dessauer.
80 Infectious Origin of Chronic Pancreatitis and Diabetes. F. Hirschfeld.
81 Pepsin Secretion in Healthy and Sick Infants. (Pepsinsekretion des gesunden und kranken Säuglings.) J. Rosenstern.
82 Differential Ocular and Cutaneous Reactions to Tuberculin in Animals. H. Wildbolz. Id. in Children. R. Bing.
83 Therapeutic Application of Radium Emanations. F. Nagelschmidt.
84 Puerperal Fever. E. Runge.

March 23, No. 12, pp. 581-632.

85 Surgery of Lower Section of Esophagus. (Chirurgie des unteren Oesophagusabschnitts.) O. Hildebrand.
86 *Diagnosis and Treatment of Puerperal Fever. J. Veit.
87 *Gastric Disturbances in Masturbators. (Magenstörungen bei Masturbanten.) C. Hirsch.
88 Decline in Mortality of Tuberculosis and Its Causes. (Abnahme der Tuberkulosesterblichkeit und ihre Ursachen.) B. Fränkel.
89 Surgery of Chronic Obstipation. W. Arbuthnot Lane.
90 *Treatment of Tumors of Bladder. (Wie soll sich der Arzt gegenüber Blasentumoren verhalten?) C. Posner.

67. Gummatous Affection of Both Caudate Nuclei.—Campbell reports the case of a young man who suddenly developed psychic disturbances, apathetic dementia, never maniacal nor showing evidences of hallucination, but with all spontaneous movements reduced to the minimum. The pulse was small, the heart sounds weak and the hands and feet were cold and cyanotic; the rectal temperature was constantly subnormal. In walking he staggered to the right or left, and in bed he lay on his back with his head bent down on his breast and the thighs drawn up, but this attitude could be passively corrected. Several gummatous nodules were found in the caudate nuclei. The features of this case confirm the assumption that a higher motor center is located in the caudate nucleus, whose destruction does not entail paralysis, but disturbance in the more complicated movements. The reflexes remained normal, and the pain sensation was unimpaired. The patient died in three months after the first symptoms.

71. Certifying the Cause of Death.—Orth emphasizes the necessity for bearing in mind the purpose for which the medical death certificate is desired, whether scientific, statistical or medicolegal. In a case of diphtheria, for example, the scientific question may be whether death was due to suffocation or heart paralysis, while for the vital statistics this is of no consequence. When it is a question as to whether or not the child died from neglect to perform tracheotomy, it is important to state the findings in the air passages, to determine whether tracheotomy in any event or at the given time would have prevented the fatal outcome. He dwells on the importance of a negative certificate when it is for legal purposes. The certificate should aim to give the authorities solid ground to stand on, so far as possible, especially the assurance whether death was spontaneous or due to an injury. When death is due to a sequence of causes the first link in the chain is generally the main point for the mortality statistics. It is important further, he says, for the certificate to be controlled and corrected by autopsy findings, and he urges more universal resort to autopsy. The legislation for accident insurance in Germany has conferred great practical importance on the medical death certificate. Each one is a separate problem and a serious task, Orth adds, requiring strict individualization. He comments sadly on the frequency with which the victim's physician ascribes the death to accident while the insurance company's medical officer as invariably rejects the accident as the causal factor. This unconscious bias for and against is human, he remarks, and thereby pardonable, but the tendency should be energetically combated.

75. Induced Hyperemia in Internal Medicine.—Lewandowski has been inducing therapeutic hyperemia in treatment of a number of non-surgical, non-inflammatory affections by application of local hot baths. This is simpler, cheaper and within the reach of all, and the effects seem to him fully as good as treatment with superheated air, if not better. He prefers bath tubs adapted for the part to be treated, for foot, arm, forehead, etc., but almost any basin or dish can be used, or hot sand or other substances. The heat should be about 42 or 43 C. (108 F.), gradually increased to the maximum of 50 C. (122 F.), and kept at this point by adding hot water. A local hot bath is free from danger and can be repeated several times a day if desired; the general sweating that follows is an important factor in the result. The local pain is reduced, the bacteria in the parts are attenuated, while the processes of dissolution, absorption and nutrition are promoted by the acute local hyperemia. The local hot baths also have a powerful action on the general circulation and are thus important in general treatment. He relates favorable experiences with them in affections of the heart, lungs, skin, digestive apparatus, vasomotor and trophic nerves, and in metabolic affections, anemia, obesity, gout and diabetes. His experience with internal affections confirms Bier's assertions in regard to the value of induced hyperemia; but he lays more stress on the benefits of rapidly induced hyperemia, "acute hyperemia" as he calls it, in distinction from Bier's technic which induces a more chronic hyperemia. In heart disease at any stage he uses hot hand and foot baths, alternating once a day or oftener, as needed. In the obese he aims to induce sweating, but in the lean he avoids this. In angina pectoris local arm baths relieve the pain, regulate the blood pressure and frequently arrest the attack. In lung affections respiratory exercises are the main thing, but hot local baths constitute a valuable adjuvant. Application of a hot-water bag or hot sponge to the larynx and trachea will arrest the spasm in whooping cough. These hot local baths are useful in cutaneous affections, especially eczema. Addition of camomile tea to the water enhances the soothing action. In old refractory cases it may be necessary to irritate the eczematous process sufficiently to change a chronic into an acute stage which then heals. It is possible, he adds, that tar owes its healing power to its ability to induce hyperemia. Besides eczema, psoriasis and acne are benefited by these baths. Hot local baths for the brow, besides hot foot and arm baths, render good service in migraine. It has been his experience that 75 per cent. of his male and 90 per cent. of his female patients suffer from cold hands and feet. Systematic, brief, frequently repeated, local hot baths remedy this condition, as also sweating of hands and feet. Affections of the digestive tract are also favorably influenced by induced hyperemia. Rinsing out the mouth with hot water has a favorable action on various affections of the mucosa; addition of camomile tea or starch to the hot water will render it less irritating. Hot drinks and hot external applications are beneficial also in gastritis, achylia, and even in simple loss of appetite. He orders such patients to take from 8 to 10 teaspoonfuls of hot water ten minutes before eating. Hot water sipped and drunk at short intervals is also effectual, he asserts, in treatment of gallstone affections, in the "uric-acid diathesis," and in gravel or stones in the kidneys. By this means, he declares, it is possible to rinse out the body with surprisingly large amounts of hot water in the course of the twenty-four hours. Hot enemas act well in intestinal catarrh, diarrhea, tuberculous abdominal processes, and especially catarrh of the sigmoid flexure; he uses a pint of a moderately thick, hot solution of starch once or twice a day. In obesity the local hot baths are best applied as sitz baths; in gout, hot water is sipped to keep up a constant hot rinsing through of the system. Diabetics, especially obese diabetics, are also benefited by local hot baths.

86. Diagnosis and Treatment of Puerperal Fever.—Veit regards the hemolytic streptococcus as the causal agent in the majority of cases of puerperal fever. When this germ is found in the lochia he abstains from all local measures, as every new wound is pregnant with evil possibilities. The blood is examined, and if the same germ is found in the blood the

prognosis is grave. Intravenous saline infusion is indicated at once, with the most energetic measures to increase the resisting powers. If the fever is the result of putrefactive processes and the hemolytic streptococcus is not found, measures to stimulate the uterine contractions are in order. If this does not promptly produce the desired effect, the most energetic local treatment is demanded. In puerperal pyemia, with the streptococcus in the blood, any operation is a serious matter.

87. **Stomach Disturbances in Masturbators.**—Hirsch calls attention to a group of cases in which the symptoms suggested gastric ulcer, but the course of the affection and the absence of effect of the usual measures differentiated the condition finally as a special form of nervous dyspepsia. The patients were generally young students or high-school boys. Several were convinced that they had some spinal cord affection; medical students frequently described their attacks as resembling in every respect the gastric crises of tabes. Milk or sodium bicarbonate relieved some, while others obtained more relief from pressure on the stomach region. The attack occurs sometimes spontaneously or after eating, and the pain in the stomach region radiates upward and toward the back. The stomach is sensitive to pressure, but not enlarged, and there are no signs of motor or secretory insufficiency In a typical case described rest and ulcer diet brought no relief, and aggravation followed a several weeks' course of treatment in a sanatorium for the assumed ulcer. The physician then told the young man that he knew he was practicing masturbation, and talked with him seriously on the subject, with the result that the stomach trouble vanished permanently.

90. **Bladder Tumors.**—The first point is an absolutely certain diagnosis, differentiating the bladder tumor from stones, tuberculous or other ulcers and kidney affections The bladder tumor once differentiated, intravesical treatment with proper instruments and experience is scarcely hazardous and is often successful in case of benign pedunculated tumors, not too large. The knife should be used only, Posner declares, when hemorrhages, disturbances in urination, rapid growth, infection or stones render it necessary to submit the patient to the risk of a serious operation with protracted after-treatment.

Deutsche medizinische Wochenschrift, Berlin.

March 12, XXXIV, No. 11, pp. 449-488.

91 *Treatment of Rachitis. F. Siegert.
92 Castor Oil in Treatment of Acute Appendicitis. T. Rosenheim.
93 *Chilling as a Cause of Illness. (Abkühlung als Krankheitsursache.) W. Siegel.
94 Etiology of Idiopathic Scoliosis in the Adolescent. M. Böhm.
95 Treatment of Stumps. (Behandlung der Gliederstumpfe.) H. H. Hirsch.

March 19, No. 12, pp. 489-536.

96 Origin of Urobilin in Intestines and Passage of Urobilin from Mother to Fetus. (Zur Urobilinfrage.) W. Hildebrandt.
97 *Headache and Its Treatment by Massage. (Kopfschmerz und seine Massagebehandlung nach Cornelius.) Worbs.
98 Aggravation of Tuberculosis by Trauma. (Verschlimmerung der Tuberkulose durch Unfälle.) L. Feilchenfeld.
99 Ossifying Myositis in the Brachialis Anticus After Luxation of the Elbow; Diagnosis and Treatment. P. Frangenheim.
100 Principles for Treatment of Inflammatory Affections of Adnexa. (Gesichtspunkte für die Behandlung entzündlicher Adnexerkrankungen.) W. Hannes.
101 *Acute Postoperative Dilatation of the Stomach and Its Connection with Arteriomesenteric Occlusion of Duodenum. (Postoperative Magendilatation.) F. Thomä.
102 *Differential Serum Reaction in Syphilis. (Die Wassermann-A. Neisser-Bruckschc Reaktion bei Syphilis. C. Bruck and M. Stern. Commenced in No. 10.
103 *Eczematous Ocular Affections. (Bekämpfung der ekzematosen Augenkrankheiten.) H. Noll.
104 Disturbances in Economy of Albumin in Infantile Organism. (Störungen des Eiweisshaushaltes im Säuglingsorganismus.) P. Seiter.
105 *Simplified Technic for Blood Count. (Neue Methode der Blutkörperchenzählung.) M. Loewenberg.

91. **Treatment of Rachitis.**—Siegert affirms that overfeeding, especially with fat, and the resulting excessive increase in weight, are able to induce rachitis in a child, even when kept up only for a few weeks, and invariably do so when prolonged. Excessive sweating of the head, rapid ammoniacal fermentation of the very abundant urine, and frequent obstipation are the precursors of rickets. The slightest sign of the latter should banish fat from the diet. He discards the bottle for the child in its second year, thinking that too much milk is bad for the healthy child and extremely injurious to the rachitic. He would also discard eggs, which he calls an expensive and unreliable food, peculiarly rich in bacteria. Eggs frequently cause disturbances in older children and are superfluous for children under 3. He advocates little if any meat, not more than a cup of milk a day, eggs only as used in preparation of other dishes, but vegetables and fruit in abundance, without much sugar, whole-wheat bread and more jam than butter with light and air, warmth and sunshine. The clothing must be very light, as the child sweats readily and needs to be able to throw off the heat generated in excess. Instead of dressing the child in woolen, he should have the lightest under and outer clothing, with a hard bed and flat pillow. In case of extreme craniotabes the back of the head can rest in a cushioned ring. The excessive sweating predisposes the skin to cutaneous affections, and they should be warded off by light massage, and aromatic and saline baths. In case of a tendency to convulsions or spasm of the glottis a calomel purge and regulation of the diet generally suffice. Very severe convulsions may require chloroform; in violent spasm of the glottis pouring cold water on the back of the neck and artificial respiration are indicated, with phosphorus for several months. The combination of phosphorus and cod liver or olive oil is invaluable in prophylaxis of this spasmophilia and should be supplemented by iron. There is so much lime in milk, cabbage, cauliflower, spinach and oranges that it is very rarely that a child needs more, and in case of developed spasmophilia some regard it as contraindicated.

93. **Chilling as a Cause of Illness.**—Siegel here relates experiments on animals which show that the presence of bacteria plus the action of cold is not always followed by development of illness. On the other hand, the action of cold—without cooperation of bacteria—is able under certain conditions to induce the development of acute parenchymatous nephritis. Chilling the feet induces by reflex action constriction of the vessels in the kidneys, and the reflex anemia thus induced is liable to persist indefinitely for a time, entailing disturbances in the circulation and in the nutrition of the cells, and degeneration of the functioning elements, with inflammation as the final outcome. The decaying cells or the abnormal metabolic products produced by degenerating cells may likewise induce an inflammatory process. The dogs in his experiments invariably developed bilateral parenchymatous nephritis even when only one foot had been chilled through in ice water. In most of his experiments the hind legs of the animals to the knee were placed in water at 4 C. (39 F.). He also found signs of mild nephritis in twelve dogs brought to him for his experiments at a time when the ground was covered with melting snow. The presence of bacteria is thus not indispensable for an acute kidney affection after being chilled.

97. **Headache and Its Treatment by Massage.**—Worbs has been applying to headache Cornelius' principle that nervous pains can be cured by massage of certain points where moderate pressure is experienced as pain. He calls them "the nerve points" and ascribes the pain to compression of the nerve at these points by proliferation of connective tissue. Systematic massage breaks up these minute adhesions and releases the nerve. The painful points with headache are at the free margin of the trapezius, the sternocleido muscle, especially at its origin and insertion and in the center, the temporal muscle, the orbital and occipito-frontal muscles. Other points may be found painful on pressure, but they occur less regularly than the above. Sometimes the massaging finger could detect at these points a strip of induration or general rigidity. The nerve trunks did not seem to be diseased and the glands in the neck were not enlarged. He massages the painful point with a single finger, with perpendicular, rotary movements. In healthy persons this massage never elicited any pain except that of the boring finger, but in persons with recurring or chronic headache massage of the predisposed parts in the muscles of the head or neck or along the course of the nerves caused considerable pain. The headache in such cases is mostly a continuous oppression throughout the head or only at the back, with characteristics of neurasthenic headache, or the pain was more neuralgic or of the migraine type. Massage of the

painful points removes the cause and cures the headache permanently. The disadvantages of the treatment are the frequently quite severe pain it induces, the violent local reaction observed in some cases, and the tedious and time-consuming massage. He has thus treated forty patients, giving massage between fifteen and twenty minutes. Improvement was manifest in every instance, and in eighteen patients examined recently the cure has persisted to date, more than a year in some. Weeks may be required to complete the course in some patients. Some returned for the massage at the first symptoms of recurrence of the headache and the attack could always be aborted in this way.

101. **Acute Postoperative Dilatation of the Stomach.**—This complication of an operation frequently entails mesenteric occlusion of the duodenum by the mesentery as it is pushed down into the small pelvis by the enlarged stomach. This stretches the root of the mesentery until it compresses the duodenum at its junction with the jejunum. Uncontrollable vomiting follows, the vomitus being mostly bile, without admixture of fecal matters. The epigastrium bulges, the intestinal functioning is arrested more or less completely and the patient grows weak. The simple but effective treatment is merely rinsing out the stomach, stopping all feeding by the mouth, and, if further measures are necessary, placing the patient in the ventral decubitus position. Albrecht in a recent study of the same subject ascribes the dilatation to the duodenal occlusion as the primary affection. In a recent case Thomä found the stomach abnormally dilated when he opened the abdomen, the intestines crowded far down. Occlusion did not develop, however, as peristalsis was stimulated and scarcely anything was allowed by the mouth while the patient was not allowed to lie on his back.

102. **Differential Serum Diagnosis of Syphilis.**—This communication from the syphilis research commission in Java reports that 81.5 per cent. of 378 patients with certain syphilis gave a positive reaction, while none of 157 persons free from syphilis showed a trace of the reaction. The findings while the patients were taking mercurial treatment are also tabulated, all the results confirming the specific nature of the reaction and its importance for the study of syphilis. The findings also have apparently established the close connection between tabes and paralysis and syphilis.

103. **Eczematous Eye Affections.**—Noll states that thousands of eyes are essentially injured every year and some become blind, from eczematous affections neglected or incorrectly treated. He found that one out of every nine patients at the Würzburg eye clinic during 1906 had some eczematous affection of the eyes, that is, 626 out of 5,817 patients with some ocular affection. In a number of these cases the condition was serious when first seen, the eye affection having been neglected or mistreated with raw veal, cow dung or something of the kind. He gives an outline for a circular calling attention to the danger of "sore eyes," emphasizing the necessity for consulting a physician at once and the danger of neglect, and warning people not to wipe the eyes with the hands or to apply a bandage.

105. **Blood Count Without Apparatus Except Microscope.**—Loewenberg dilutes the blood 1 to 400, takes up a drop on a round object glass and presses a cover-glass on it. He examines it through the microscope and counts the number of corpuscles in the field. As two circles are proportional to each other according to the squares of their radii, he computes the total number of corpuscles on the object glass by this formula. The radius of his microscopic field is 0.5 mm. and of his object glass 10 mm.; the object glass field thus represents 2,500 of the microscope fields, and if 25 corpuscles are counted in one field it is easy to compute the number in a cubic centimeter. If, for example, 5 c.mm. of blood diluted to 400 were used, then 2,500 multiplied by 400 and divided by 5, and then multiplied by the number of corpuscles observed in the microscope field, would give the correct number of corpuscles in a single cubic millimeter. The dilution to 400 is made by mixing 10 c.mm. of blood with 4 c.c. of a 3 per cent. salt solution.

Deutsche Zeitschrift für Chirurgie, Leipsic.

February, XCII, Nos. 1-3, pp. 1-261.

106 Abdominal Firearm Wounds and Their Treatment. (Bauchschüsse im Frieden und ihre Behandlung.) A. Hagentorn.
107 Imperfect Development of Bone or Early Osteomalacia as Basis for Idiopathic Fragility of the Bones. (Osteogenesis imperfecta oder frühe Osteomalacie als Grundlage der idiopathischen Osteopsathyrosis?) Axhausen.
108 Syphilitic Dactylitis. O. Creite.
109 Thrombosis in Superior Mesenteric Vein Cured by Operation. T. Haagn.
110 *Antitoxin Treatment of Traumatic Tetanus. (Wundstarrkrampf.) Brandenstein.
111 Extracapsular Radical Resection of Tuberculous Elbow Joint. (Resektion des tuberkulösen Ellenbogengelenks.) W. Lossen.
112 Anatomy of Madelung's Deformity of the Hand. Franke.
113 Case of Primary Actinomycosis of the Kidney. (Primäre Nierenaktinomykose.) Kunith.
114 *Catgut Treated as Fresh Intestine with Iodin or Silver Before It Is Twisted. (Katgut, steril vom Schlachttier, als frischer Darm vor dem Drehen mit Jod oder Silber behandelt.) F. Kuhn and M. Rössler.
115 Faulty Overcorrection Under Steinmann's Nail Extension. (Ueberkorrektur bei Nagelextension.) Wilms.

110. **Antitoxin Treatment of Tetanus.**—Brandenstein reports 24 cases of traumatic tetanus and 2 of local tetanus with a mortality of 82.3 per cent. Antitetanus serum was used in 20 cases and 4 of the patients recovered while all the patients died in the group of 6 without serum treatment. Every case with incubation of less than eight days terminated fatally. The amount and virulence of the toxin produced soon after the injury and early anchored to the cells, evidently determine the outcome of the case. The toxin produced later can be neutralized by antitoxin, but it is powerless to act on that already fastened on the cells. Amputation of the part does not affect the toxin already anchored to the cells. The only means at our command to prevent the toxin from becoming fastened on the cells is by prophylactic use of the antitetanus serum, and this has given promising results in experimental research and in the clinic. A prophylactic injection of serum at the time of the traumatism has generally rendered the course of tetanus later very much milder and lengthened the period of incubation. In Pochhammer's case he injected the serum fourteen hours after the injury; two weeks later signs of local tetanus were observed, with general symptoms three weeks later and death after twenty-nine days. The interval of fourteen hours in this case was too long. Dönitz has shown that for a prophylactic injection in an animal the dose effectual after four minutes has to be six times as large after an interval of eight minutes, twelve times as large after fifteen minutes, and twenty-four times as large after an hour. These facts and others cited emphasize the importance of injecting the antitoxin at the earliest possible moment after the injury. They also teach that the amount to be injected must be increased in proportion to the time that has elapsed. The longer the interval since the traumatism the larger the amount of antitoxin needed to neutralize the toxin circulating in the blood. Terrier and Mercadé have reported a case in which tetanus developed eighty-seven days after a compound fracture of the upper arm. The disease ran a protracted course and the patient recovered. Antitetanus serum had been injected as a prophylactic measure soon after the injury, and they ascribe to its action the unusually long incubation and mild course. If they had injected a larger dose the tetanus might possibly have been warded off altogether. In the Berlin hospital where Brandenstein is assistant, prophylactic injections on these principles are now made in all cases of wounds soiled with garden or street dirt or horse manure, or made by splinters, bullets or by freezing. In most cases the injuries were from being run over by vehicles. Tetanus has never developed in any of these cases after a prophylactic injection. In conclusion he reiterates that—judging from his experience—after tetanus is once declared, injection of antitoxin is entirely useless, but that prophylactic injections are as necessary as the tardy injections are futile.

114. **Sterile Production of Catgut from Animal to Suture.**—The importance of avoiding contamination of the animal's intestines from which catgut is to be made has impelled Kuhn and Rössler to devise means to produce a catgut that is as nearly aseptic as possible. Their efforts in this line have been previously mentioned in these columns. They here report tests of the catgut thus prepared introduced in the eye or ear of a rab-

bit or into the human skin, with comparative tests with catgut of other makes. They also report results of comparative tests of absorbability and strength. They state that the conclusions of the whole research are in favor of their technic.

Jahrbuch für Kinderheilkunde, Berlin.

March, LXVII, No. 3, pp. 261-382.

116 *Metabolism in Myxedema. (Stoffwechsel bei Myxödem.) E. Benjamin and A. von Reuss.
117 Catalysis of Human Milk. (Katalyse der Frauenmilch.) F. von Torday and A. von Torday.
118 Bacteriologic Research in a Case of Noma. E. Hellesen.
119 *Treatment of Prolapse of Rectum in Children by Injection of "Paraffin Splints." (Behandlung des kindlichen Mastdarmprolapses durch Längsversteifung des Rectum.) N. A. Kephallinos.

116. Metabolism in Myxedema.—The tabulated findings in the various cases described show that in myxedema there is a pronounced tendency to retention of nitrogen and also, perhaps, of phosphorus.

119. Paraffin Splints in Prolapse of the Rectum in Children.—Kephallinos reduces the prolapse and then injects paraffin on each side, drawing out the needle as the paraffin is injected so that a long strip of the paraffin is left in the tissues, forming as it solidifies two straight sticks or splints in the pararectal tissue. This holds the walls stiff and obviates all tendency to prolapse. The paraffin is injected under ether. The needle is introduced about 1 cm. outward and backward from the rectum and it is pushed upward in the pararectal tissue as high as possible, or the paraffin can be injected at two or three points on each side of the rectum. This forms solid rods supporting the rectal walls. The child is kept in bed two days and then discharged. He has thus treated thirty-two patients and states that the results have been satisfactory in every instance. In one case, however, about a year later, the wall became abraded and scraps of paraffin worked their way through and were voided in the stools, but the dense growth of connective tissue around the paraffin has rendered the wall permanently unyielding so there has been no recurrence of the prolapse or other disturbance. There was recurrence in one case in which a single injection had been made; the paraffin splint had evidently bent at a weak point. The first cases date from 1903, and the patients have all been re-examined since.

Medizinische Klinik, Berlin.

March 22, IV, No. 12, pp. 391-432.

120 *Treatment of Surgical Tuberculosis in Children. A. Tietze.
121 *The Leucocytes in Typhoid. K. Himmelheber.
122 *Cutaneous Reaction to Tuberculin and Intravenous Tuberculin Treatment. (Die von Pirquetsche Hautreaktion und die intravenöse Tuberkulinbehandlung.) F. Mendel.
123 Literature of 1907 on Military Medical Matters. (Literatur des Militarsanitätswesens, 1907.) G. Körting.
124 Artificial Radium Emanation. (Künstliche Radiumemanation.) Reidel
125 *Relations Between Joint Affections and the Menopause. (Beziehungen von Gelenkkrankheiten zur klimakterischen Lebensepoche.) F. Neumann.
126 Four Hundred Gallstone Cases, 1906. F. Fink (Karlsbad).
127 Catalysis in Its Relations to Medicine. (Katalyse in ihren Beziehungen zur Medizin.) H. Schade.

120. Surgical Tuberculosis in Children.—Tietze describes experiences and presents other arguments to confirm the immense importance of general treatment for surgical tuberculosis in children.

121. Changes in Leucocytes in Typhoid.—Himmelheber ascribes great differential importance to the discovery of abnormally small numbers of leucocytes in a dubious febrile affection, as speaking strongly in favor of typhoid. If the numbers of leucocytes are approximately normal, either because the disease has passed its early stage or on account of complications, the preponderance of mononuclears at the expense of the neutrophiles is further evidence of typhoid. The diagnosis seems certain when there is a complete reversal of normal proportions between these two forms of leucocytes. Lymphocytosis and eosinophilia are an index of past typhoid.

122. Intravenous Tuberculin Treatment and Differential Cutaneous Reaction.—Mendel thinks that the intravenous technic is peculiarly adapted for tuberculin treatment of tuberculosis. It is no more dangerous in respect to local or general injury, he states, than by subcutaneous injection, while it has the advantages of painless application, accuracy in dosage and reliability of action. He dilutes the tuberculin with salt solution or a preparation of arsenic and injects a tenth of a milligram to begin with. All the tuberculin gets into the circulation by this means, while by the subcutaneous route part is lost in the tissues, thus rendering the effectual dosage extremely unreliable and the variability in the absorption enhances the misleading effect. Delayed reaction, protracted fever and signs of cumulative action are all avoided by the intravenous route, he claims.

125. Relations Between Joint Affections and the Menopause.—Neumann states that he has never encountered Heberden's nodules in any women before the climacteric period; in many cases they are the only external manifestation of the "change of life;" in others they are accompanied by joint affections. He has also observed that certain joint affections in women develop during the menopause or immediately afterward. It is remarkable how few joint affections in women of this age have any traumatic factor, which is the rule in chronic joint affections in men. Local lipomatosis was a frequent accompaniment of the joint affections in the women, especially of the knee or ankle. The thigh sometimes attains a circumference of half a yard or more while the legs are not extraordinarily fat. The semitendinosus and semimembranosus muscles were sometimes transformed into actual cylinders projecting above the environment and painful on pressure. The knee and ankle may also be swollen. The joints may develop arborescent lipoma and Heberden nodules or enlargement of the finger joints may be observed. He has observed the development of these joint affections in unmistakable connection with the menopause in forty-seven cases, and also in six cases in which the menopause was brought on by the removal of the ovaries. He comments on the absence of literature on the subject of the joint affections of the menopause while the nervous phenomena have been so exhaustively studied, including coccygodynia which he regards as the typical climacteric phenomenon. The practical results of his experience and research emphasize the causal treatment of the joint affections in women during or after the menopause by administration of ovarian extract to supply the missing internal secretion of the ovaries. He is convinced that it is a powerful adjuvant to the ordinary measures, the benefit observed in his patients confirming the necessity for supplying or substituting the internal secretion of the missing or degenerating ovaries in these cases. In respect to application of heat to the affected joints he has found that measures which raise the temperature of the body for a considerable time produce the best effects, improving the general health and nutrition.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin.

March, XXVII, No. 3, pp. 297-414.

128 *Decapsulation of Kidneys in Treatment of Eclampsia. W. T. Wiemer.
129 *Primary Carcinoma of Fallopian Tube. E. Kehrer.
130 *Case of Death After Steam Cauterization of Uterus. (Todesfall nach Atmokausis.) H. Cramer.
131 Formalin in Disinfection of the Hands. (Formicin, ein neues Händedesinfiziens.) H. Futh and Meyerstein.

128. Decapsulation of Kidneys in Treatment of Eclampsia.—In the case reported, a previously healthy woman who had had slight edema of the legs during the last two months of pregnancy, developed symptoms of impending eclampsia seventeen hours after delivery, although diuresis had been apparently normal. After three seizures the patient became unconscious and the seizures recurred with increasing frequency unmodified by symptomatic measures. After decapsulation of both kidneys the seizures stopped at once and consciousness returned after profound coma for five hours. Before the operation the urine showed 12 per thousand albumin, but soon afterward only 1.5 per thousand. The findings in one kidney indicated acute nephritis; the capsule was readily detached and the kidney tissue gushed out when the capsule was incised, showing that there was unusually high pressure in the parenchyma. After the operation large amounts of urine were excreted, the flow through the wounds hindering their healing.

129. Primary Carcinoma of Fallopian Tube.—Kehrer reports a case which he states is the eightieth on record of primary carcinoma in a tube. The patient was a woman of 57 who had

suffered during the last three months from pains in the abdomen and stomach with considerable bloody purulent vaginal discharge. Pain occurs early with these tubal carcinomas, evidently from peritonitic adhesions and tension of the walls of the tube. The pain is frequently spasmodic and subsides completely at times, while with uterine cancer the pain is more stationary. The pain may radiate into the sacrum, thighs, back or stomach. The healthy aspect of the patients, even with advanced tubal carcinoma, the rapid growth of the tumor, and the absence of fever may help to differentiate tubal cancer early. Tubal carcinoma displays a tendency to spread by two routes of lymphatics, to the upper and inguinal lumbar glands and the external iliac, hypogastric and sacral glands. When puncture through the vaginal wall reveals a reddish-brown fluid, cancer is probable; crumbling cancer masses can sometimes be detected in the puncture fluid. In the eighty cases on record a permanent cure was obtained in only five cases; extensive ablation is imperative. In the case reported the pelvic connective tissue formed a cancerous plate which it was impossible to remove. In shape, size, location, consistency and adhesions, tubal carcinoma does not differ from pyosalpinx. Tubal carcinoma is exceptionally malignant, probably owing to the thinness of the walls and the dual mode of spreading into the lymphatics. Even the high retroperitoneal and supraclavicular glands become early involved. The growth is at first papillary and becomes alveolar later, as a rule.

130. **Steam Cauterization of the Uterus.**—Cramer has applied this measure in 78 cases since 1900 and Fuchs in 150. He applies the steam for one minute or for a minute and a half, at a temperature of 110 C. (230 F.). The patients must be kept under supervision for several weeks, as there is liable to be considerable discharge and disturbance when the eschar is thrown off. He reports here a case of fatal septic infection of the necrotic masses, the first symptoms observed three days after the operation. Possibly prompt vaginal hysterectomy on the fourth or fifth day might have led to recovery, as in septic abortion, but this was not done until the ninth day, when it came too late. The pulse at 100 and the subsidence of the temperature the sixth, seventh and eighth days masked the severity of the infection. The patient was a consumptive with three living children, a ten weeks' pregnancy having been terminated by abortion, followed by recurring uterine hemorrhages. After curetting, the uterus was cauterized with steam. The patient succumbed to ascending septic infection of the necrotic tissues which it is impossible, he says, to protect against secondary ascending infection. He never applied this technic until convinced by bimanual examination that there were no signs of an inflammatory affection of the adnexa or perimetrium or adhesions. In the case described every precaution for asepsis, rubber gloves, etc., had been scrupulously observed throughout the entire case.

Münchener medizinische Wochenschrift.

March 17, LV, No. 11, pp. 545-600.

132 The Fluid in the Conjunctival Sac. (Flüssigkeitshaushalt im gesunden und im kranken Bindehautsack.) O. Schirmer.
133 Decay of Blood Plates, Coagulation of Blood and Coagulation of Muscles. (Blutplättchenzerfall, Blutgerinnung und Muskelgerinnung.) K. Burker.
134 Stethoscope to Measure Subjective Strength of the Heart Tones. (Stethoskop zur Messung der subjektiven Stärke der Herzklänge.) H. Bock.
135 *Treatment of Eclampsia. Osterloh.
136 Harmlessness and Superiority of the Tuberculin Salve Reaction Over the Ocular Reaction. (Vergleichende Untersuchungen mit der Konjunktivalreaktion nach Wolff-Eisner und der Salbenreaktion nach Moro.) H. Heinemann.
137 Relations Between Infantile Mortality, Infant Feeding and Capacity for Military Service. (Beziehungen zwischen Säuglingssterblichkeit, Säuglingsernährung und Militartauglichkeit.) M. Hahn.
138 Viability of New-born Infants with Very Large Inoperable Umbilical Hernias. (Lebensfähigkeit Neugeborener bei sehr grossen inoperablen Nabelschnurbrüchen.) Durlacher.
139 *Instantaneous Roentgen Pictures with Exposures from a Distance. (Roentgenmomentaufnahmen mit den bisher gebräuchlichen Apparaten.) F. M. Groedel and C. Horn.
140 Electricity of the Skin. (Hautelektrizität.) E. Harnack.
141 Fulguration According to Keating Hart. B. Wiesner.
142 Research on Opsonins. (Opsoninuntersuchungen.) H. Much.

135. **Treatment of Eclampsia.**—Osterloh here reviews his thirty-five years' experience in the treatment of eclampsia and emphasizes the change brought about by the new conception of the fetal and placental origin of the eclampsia toxin. He warns that instrumental or rubber bag dilatation must be done with as great regard for asepsis as a major operation. He has seen excellent results from venesection followed by infusion of large amounts of salt solution. In 40 cases he injected subcutaneously as much as 3,500 c.c. in twenty-four hours. Venesection is, of course, contraindicated when the patient is very anemic, with small rapid pulse with low waves; its widest field is with full, hard pulse, more or less cyanosis and incipient pulmonary edema. Application of heat to stimulate kidney functioning is best done with the electric light box placed under the bedclothes for from twenty to twenty-five minutes, using four lamps each of 32-candle power. If this measure is contraindicated he applies a pack to the entire body. He would not hesitate to propose decapsulation of the kidney in very threatening cases, but otherwise would avoid it. Even after subsidence of the eclamptic seizures the patient may succumb to heart failure or pulmonary edema, and consequently she should be constantly supervised and stimulants given as needed, keeping the mouth and throat free from mucus and blood, with artificial respiration, cold slapping and frictions, especially of the heart region, and massage of the heart—all frequently repeated. He has never used oxygen in treatment, but intends to give it a trial in future cases as Stroganoff has reported good results from its use. The prognosis must be guarded, as a psychosis frequently develops subsequent to eclampsia, or albuminuria may persist, even when the patient appears entirely well.

139. **Instantaneous Skiagrams Taken from a Distance of Over Six Feet.**—Groedel and an engineer, C. Horn, give an extraordinarily distinct skiagram of the thorax taken with an instantaneous exposure from a distance of 6½ feet. The ordinary apparatus is used, the special features being merely extra care in respect to perfection of the isolation (inductor) and constancy of the vacuum, with a high primary charge.

Wiener klinische Wochenschrift.

March 19, XXI, No. 12, pp. 379-414.

143 Behavior of Human Skin in Respect to Various Bacterial Toxins. (Verhalten der menschlichen Haut gegen verschiedene bakterielle Giftstoffe.) R. Entz.
144 *Puncture Reaction After Injection of Tuberculin. (Wert der Stichreaktion nach Tuberkulininjektion.) F. Hamburger.
145 Differential Serum Reaction in Syphilis According to Porges-Meier and Klausner Technics. (Wert der Serumreaktion bei Syphilis.) W. Fritz and O. Kren.

144. **The Puncture Reaction to Tuberculin.**—Epstein as long ago as 1891 called attention to the more or less intense redness and swelling observed at the point where a subcutaneous injection of tuberculin has been made. Escherich confirmed his statements and called it the puncture reaction, and Spengler has also spoken of it as a specific reaction. Hamburger mentions these facts and expresses amazement that no one hitherto has paid any attention to this reaction as having diagnostic significance, and yet, he adds, it is the most delicate, the most sensitive and the most harmless of all the differential reactions that have recently attracted attention. The injection of 1 mg. or less of old tuberculin causes in the tuberculous a distinct and specific reaction at the point of injection, persisting through four or five days and positive in many cases in which the other differential reactions are negative or dubious. His experience with 200 children showed that the puncture reaction was positive in 28 out of 33 between the ages of 11 and 14. Comparison of the findings with those of the other tuberculin tests and with autopsy findings confirmed the reliability of the puncture reaction.

Archivio per le Scienze Mediche, Turin.

XXXI, No. 5, pp. 413-476.

146 Relations Between Menstruation and Commencement of Pregnancy. (Rapporti esistenti fra la mestruazione ed il principio della gravidanza.) R. Fusari.
147 Encapsulated Oxyurides in the Peritoneal Cavity. F. Strada.
148 Ligation of Bile Duct and Regenerative Processes in the Liver. (Legatura del condotto coledoco e processi rigenerativi del fegato.) A. Fabris.
149 Experimental Research on Behavior of Plasma Cell During Healing of Wounds Subjected to Stasis Hyperemia. (Plasma cellula nella guarigione delle ferite sottoposte all' iperemia di Bier.) E. Grimani.
150 Nature of Negri Bodies and Corpuscles Between Them. (Corpi di Negri.) G. Volpino.

No. 6, pp. 477-539.

151 *Study of the Thyroid Gland and Its Adnexa. (Ghiandola tireoide e suoi annessi.) S. Verson.
152 *Histologic Study of Osteomalacia. (Osteomalacia umana.) G. Baggio.
153 *Hematogenic Tuberculosis. A. Donati.

151. **Research on the Thyroid Gland.**—This monograph issues from Golgi's and Fusari's institutes and is accompanied by four colored plates. It discusses the structure of the thyroid gland and describes peculiar findings noted at autopsies, the presence of epithelial cells in the blood vessels of a thyroid gland, of cartilaginous tissue and branchiogenic epithelium in the normal thyroid, growth of parathyroid gland to the thymus, and outgrowths of the thyroid observed in fetuses.

152. **Histologic Research on Osteomalacia.**—The four osteomalacic skeletons studied by Baggio were so soft that artificial decalcification was not required. The findings are shown in a colored plate and an attempt is made to explain the mechanism of the process as the work of the bone cell.

153. **Hematogenic Tuberculosis.**—Donati reports experiments on rabbits and guinea-pigs injected in the carotid artery with a filtered six-day culture of tubercle bacilli grown on a mixture of beef serum, water and glycerin by Vasilescu's technic. The few bacilli left in the fluid did not invariably induce general infection in the rabbits, but tuberculous lesions developed in the lungs invariably and often exclusively. The tuberculous process did not locate primarily in the lymph nodes except when there was a miliary process. In guinea-pigs the lungs did not show so great a tendency to localization of the process as the spleen and lymph nodes. He explains this as due to the greater resisting powers of the rabbit; the few germs circulating through these and other vital organs in the rabbit were promptly destroyed while in the guinea-pig conditions were favorable there for their localization.

Gazzetta degli Ospedali, Milan.

March 8, XXIX, No. 29, pp. 297-312.

154 *Sodium Nitrite and Amyl Nitrite in Hemoptysis and in Other Forms of Hemorrhage. (Ancora sull'azione del nitrito di sodio e del nitrito di amile in certi tipi di emottisi . . . e in altre forme di emorragia.) A. Campani.
155 Hematic Cysts of the Spleen. (Cisti ematiche della milza.) F. de Marchis.
156 *Suprarenal Treatment in Gastrointestinal Affections and Neurasthenia. A. Bussi.

March 15, No. 32, pp. 329-344.

157 Physiologic Action of Isomeric Camphor. (Canfore isomere.) A. G. Pari.
158 Tendinitis and Peritendinitis. L. Paglieri.
159 *Malarial Hemoglobinuria. (Emoglobinurie malariche spontanee, chiniche e miste.) F. Solimena.

154. **Sodium Nitrite and Amyl Nitrite in Hemorrhage.**—Campani thinks that hemoptysis is the result of a combination of unusual irritability on the part of the blood vessels and increased blood pressure. The conditions are approximately the same as in the menstrual molimen—temporary vascular erethism and hypertension. Both these factors can be controlled by drugs which reduce the erethism and blood pressure, and among these sodium and amyl nitrite—which have been found so useful in the analogous disturbances of arteriosclerosis—take the lead. He found that the two nitrites have about the same action, but amyl nitrite acts almost instantaneously, while sodium nitrite, by the mouth, does not make its effect felt for 15 or 20 minutes, but it is more prolonged, lasting for nearly four hours. The drug, he thinks, acts on the entire vascular system, but with special force on the largest arteries; in consequence of which the blood accumulates in them, draining the periphery to a certain extent. This explains the accentuation of the second aortic and pulmonary sounds noted in tests on himself, the carotid pulsation and the comparative anemia at the periphery. Soulier was able to excise pieces of lung tissue in rabbits, after inhalation of amyl nitrite, without the loss of a drop of blood. It seems probable that the nitrites might also act effectually on certain other forms of peripheral hemorrhage, epistaxis, erosions in the stomach, etc., but Campani has had no experience in this line. If the hemoptysis occurs in consequence of rupture of a large vessel in the lungs no benefit need be expected from the nitrites. The pulse is small and weak in these colliquative cases, and the conditions directly contraindicate such energetic medication. Ice to the chest may be useful in these cases, inducing vasoconstriction in the lungs, as also sucking scraps of ice to subdue reflex irritation to cough, opiates, the patient sitting rather than reclining and refraining from speaking. He does not approve of ergot; the effect was bad in the few cases in which he has employed it. The patients with strong and tense pulse treated with the nitrites all displayed prompt benefit, even without opiates. He has had no experience with ipecac, although Dieulafoy recommends it to reduce the vascular erethism and hypertension. The influence of certain seasons was marked in some of his forty patients. One patient had bloody sputum only in January, March, May and September, recurring in these months year after year for more than twenty years It was always preceded by certain symptoms, suggesting a hemorrhagic aura. This patient's lungs are thickened and more or less sclerous throughout. Similar cases of seasonal recurrence have recently been published by Jansen and others, and Campani thinks that if we watch our own physiologic processes we will find certain modifications recurring according to certain seasonal or meteorologic laws, periods of feeling well being followed by periods of listlessness and pallor without apparent cause.

156. **Suprarenal Treatment as a Tonic and Regulator.**—Bussi reports 96 cases of gastrointestinal atony, 14 of neurasthenia with depression connected with obstipation, and 13 cases of dilatation of the stomach, in all of which he administered in addition to the usual measures an extract of the medullary substance of the suprarenals, with excellent results, during the last two or three years.

159. **Hemoglobinuria.**—Solimena gives the details of twelve cases of malarial hemoglobinuria. The age of the patients ranged from 5 to 67 years; some had taken quinin, with or without phenacetin, and others had taken no drugs for some time. They prove, he thinks, the existence of three types of hemoglobinuria, the spontaneous, the quinin type and the mixed type. Four of his patients belonged to the first group, and the hemoglobinuria was promptly cured by quinin. Five were of the quinin type; the hemoglobinuria came on two or three hours after ingestion of the drug and subsided about twenty-four hours after its suspension. In one case an entire family manifested an idiosyncrasy to quinin. Two patients presented the mixed form. The hemoglobinuria developed soon after a small dose of quinin and was evidently started by the quinin, but was maintained by other factors; the intensification of the symptoms on its suspension and their subsidence on resumption of the quinin justifying this assumption. In the quinin intoxication all the symptoms are more accentuated, while in the spontaneous form they persist longer. The spontaneous type subsides in two or three days, the mixed type lasts for three or four days, and the jaundice for the same period, while the duration of the hemoglobinuric nephritis can not be foretold; it proved fatal in one of the cases cited.

Policlinico, Rome.

March, XV, Medical Section, No. 3, pp. 97-144.

160 *Familial Optic Nerve Disease. Fortunati and G. Mingazzini.
161 Cystic Tumor in Third Ventricle Originating in the Choroid Membrane. A. Calonzi.
162 *Case of Typical Volitional Pathologic Synkinesis of the Hands. M. Volpe.

March 15, Practical Section, No. 11, pp. 325-356.

163 *Splenic Anemia. Cirrhosis of the Liver of Splenic Origin. G. Rummo.
164 Case of Idiopathic Progressive Atrophy of the Muscles. A. Accornero.

160. **Familial Optic Nerve Disease.**—This study of optic neuritis occurring in two brothers and in a brother and a sister in another family is the conjoint work of the professors of ophthalmology and neuropathology at Rome. The cases reported confirm the preponderance of males and the prevalence of the affection in the children of a family without evidence of a hereditary tendency. The onset of the affection has been observed at various ages, ranging from the fifth to the sixty-seventh year, but the twentieth year is the most frequent date for development of symptoms. As a rule, the different members of the family become affected at about the same age,

and the form observed is the same for the different members of the family. No appreciable influence from alcohol, etc., in the parents could be detected in these cases. In one of the families the bilateral chronic retrobulbar neuritis in one brother reduced the vision permanently to 1/30; in the other brother vision of 1/40 gradually improved under alternating subcutaneous injections of pilocarpin and strychnin, with iodid internally, hydrotherapy and rest, until vision became 1/3. In the second family both members improved materially under the above measures and application of the galvanic current to the eyes.

162. **Synkinesis of the Hands.**—The patient was a woman of 28 and since infancy she had been unable to use one hand without making the same movements with the other hand. Volpe remarks that this is the tenth case on record of this condition in persons free from hemiplegia or similar affections He ascribes it—for reasons which he details—to injury of the cortex during the third and fourth months of intrauterine existence.

163. **Splenic Origin of Cirrhosis of the Liver.**—The symptomatology of pure splenic anemia is classified and tabulated, also the signs of the pre-ascitic stage of atrophic cirrhosis of the liver with enlargement of the spleen and anemia—Banti's disease. These are: 1, progressive increase or reduction in size of the spleen and change in its consistency; 2, the veins become more conspicuous, especially in the upper part of the abdomen; 3, symptoms of insufficiency on the part of the liver: defective bile production allowing urobilinuria, uroerythrinuria, bilirubinuria, cholemia and clay-colored stools; defective transformation of urea, causing hypoazoturia; defective sugar metabolism, causing alimentary glycosuria and levulosuria; defective antitoxic action, increasing the urotoxic coefficient, and defective elimination of methylene blue. Besides these fundamental signs there are the following accessory signs: 1, a tendency to hemorrhages; 2, pain in the liver region; 3, gastrointestinal disturbances, dyspepsia, loss of appetite, meteorism, attacks of diarrhea or obstinate constipation, pain in the intestines and hemorrhoids; 4, edema in the legs. In addition to this atrophic venous cirrhosis Rummo distinguishes the variety with venous hypertrophy and that with bilious hypertrophy and a combination of these different types. He also calls attention to the hematic variety of cryptogenic splenic anemia in adults presenting very nearly a pernicious or a leukemic type. The cirrhosis-inducing form of splenomegaly due to malaria may occur with venous atrophy or venous hypertrophy or, exceptionally, with biliary or mixed cirrhosis.

Nordiskt Medicinskt Arkiv, Stockholm.

February, XL, Internal Medicine Section, No. 3.

165 *Occurrence and Importance of Gastric Hypersecretion in Absence of Motor Insufficiency. (Vorkommen und Bedeutung der Hypersekretion bei Abwesenheit von motorischer Insuffizienz.) S. A. Pfannenstill. Commenced in No. 2.

166 *Occurrence of Tumors in People of Greenland. (Vorkommen von Geschwülsten bei der Bevölkerung in Grönland.) G. Meldorf.

165. **Hypersecretion in Absence of Motor Insufficiency.**—Pfannenstill's report of extensive research on the secretory functioning of the stomach with normal motor conditions states that examination of a number of healthy persons gave no findings confirmatory of the possibility of physiologic hypersecretion. Among 58 cases of various digestive disturbances with normal motor functioning (ulcer, cancer, dilatation of the stomach and ptosis), he found constant hypersecretion in 31 per cent., intermittent hypersecretion in 31 per cent., and no tendency to hypersecretion in 38 per cent. Not one of the cases with hypersecretion presented the Reichmann-Riegel symptom-complex. In presumptively differentiated chronic gastritis, 83 per cent. of the patients showed constant hypersecretion while it was noted in only 17 per cent. of the patients with a gastroneuritis. This suggests, he thinks, that hypersecretion is in most cases a symptom of chronic (irritative) gastritis. When this latter combination is once established the secretion remains excessive in amount and complete restitution is scarcely probable. If stenosis of the pylorus follows, then the syndrome of Reichmann's disease is liable to be observed, but he has had no personal experience with such a case. Constant hypersecretion may occur with hyperacidity or normal acidity, but was never encountered in his cases with subacidity or anacidity. His experience further confirms the fact that gastric ulcers do not inevitably entail motor insufficiency.

166. **Tumors in Greenlanders.**—Meldorf has been examining the official reports of six district physicians besides his own, all referring to practice in Greenland. Among the 15,000 patients less than 1 per cent. had tumors, and only a few of these were malignant. The list includes one sarcoma of the left femur, adenosarcoma of the neck, cancer of the parotid gland, of the cheek, one case of uterine cancer, 5 cases of epithelioma of the face, 2 of cancer of the esophagus, 4 of the breast, 2 of cancer of the pylorus, 3 of cancer of the liver and one each of cancer of the rectum and abdomen, and several of cancer of the testicles; the latter may include a few cases of tuberculous orchitis.

Norsk Magazin for Lægevidenskaben, Christiania.

March, LXIX, No. 3, pp. 181-292.

167 *Permanent Slow Pulse with Apoplectiform or Epileptiform Attacks and Heart Block. (Om Stokes-Adams' sygdom og "Heart Block" hos mennesket.) P. F. Holst.

168 *Attempt to Explain Etiology of Rachitis on New Basis. (Rakitens etiologi.) B. Ebbell.

169 Technic for Operative Treatment of Glaucoma by Slitting the Iris. (Iridencleisis antiglaucomatosa.) S. Holth.

167. **Stokes-Adams Syndrome.**—Holst describes five cases and explains that the Stokes-Adams condition is not a special affection but merely a combination of symptoms with the one constant phenomenon of heart block, and that the pathogenesis and etiology may differ for each case.

168. **Etiology of Rachitis.**—Ebbell's attention was attracted to the question why rachitis is comparatively so rare in the tropics. Study of its geographical distribution shows that it increases in frequency the greater the distance from the equator, irrespective of race, etc. He concludes that its frequency in lands without much sunshine, the influence of the seasons, the curative effect of country air, the rarity of rachitis at higher altitudes, with other facts observed, suggest that rachitis is the result of lack of light. This assumption is confirmed by some experiments with rachitis in animals and malformations in plants grown in the dark. Ebbell, therefore, asks whether it may not be possible that lack of light is an essential factor in the production of rachitis. The ultraviolet rays are particularly important, he thinks, from this point of view, and he calls attention to the fact that window glass arrests the passage of most of these rays so that children kept much in the house are deprived of the ultraviolet rays in particular.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE BACTERIOLOGY OF DIPHTHERIA. By F. Loeffler, M.D., LL.D., Arthur Newsholme, M.D., F.R.C.P., F. B. Mallory, M.A., M.D., G. S. Graham-Smith, M.A., M.D., D.P.H., George Dean, M.D., William H. Park, M.D., Charles F. Bolduan, M.D. Edited by G. H. F. Nuttall, M.D., Ph.D., Sc.D., F.R.S., Quick Professor of Biology in the University of Cambridge, and G. S. Graham-Smith, M.A., M.D., University Lecturer in Hygiene, Cambridge. Cloth. Pp. 718. Price, $7.50. New York: G. P. Putnam's Sons, 1908.

CANCER. By Skene Keith, M.D., F.R.C.S. Ed. Author of "Introduction of the Treatment of Disease by Galvanism." "Electricity in the Treatment of Uterine Tumors," "Gynecological Operations." and George E. Keith, M.B., C.M., Author of "Text-Book of Abdominal Surgery" with Mr. Skene Keith. Pp. 155. Cloth. Price, $1.25. New York: The Macmillan Co., 1908.

A MANUAL OF DISEASES OF CHILDREN. By John Ruhräh, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Second Edition, Thoroughly Revised. Pp. 423, with illustrations. Flexible Leather. Price, $2.00. Philadelphia: W. B. Saunders Co., 1908.

AN AID TO MATERIA MEDICA. By Robert H. M. Dawbarn, M.D., Professor of Surgery and of Surgical Anatomy, New York Polyclinic Medical School. Fourth Edition. Revised and Enlarged by Eden V. Delphey, M.D. Pp. 338. Cloth. Price, $1.75. New York: Macmillan Co., 1908.

FORTIETH ANNUAL REPORT OF PHILADELPHIA ORTHOPEDIC HOSPITAL AND INFIRMARY FOR NERVOUS DISEASES. Pp. 70. Paper.